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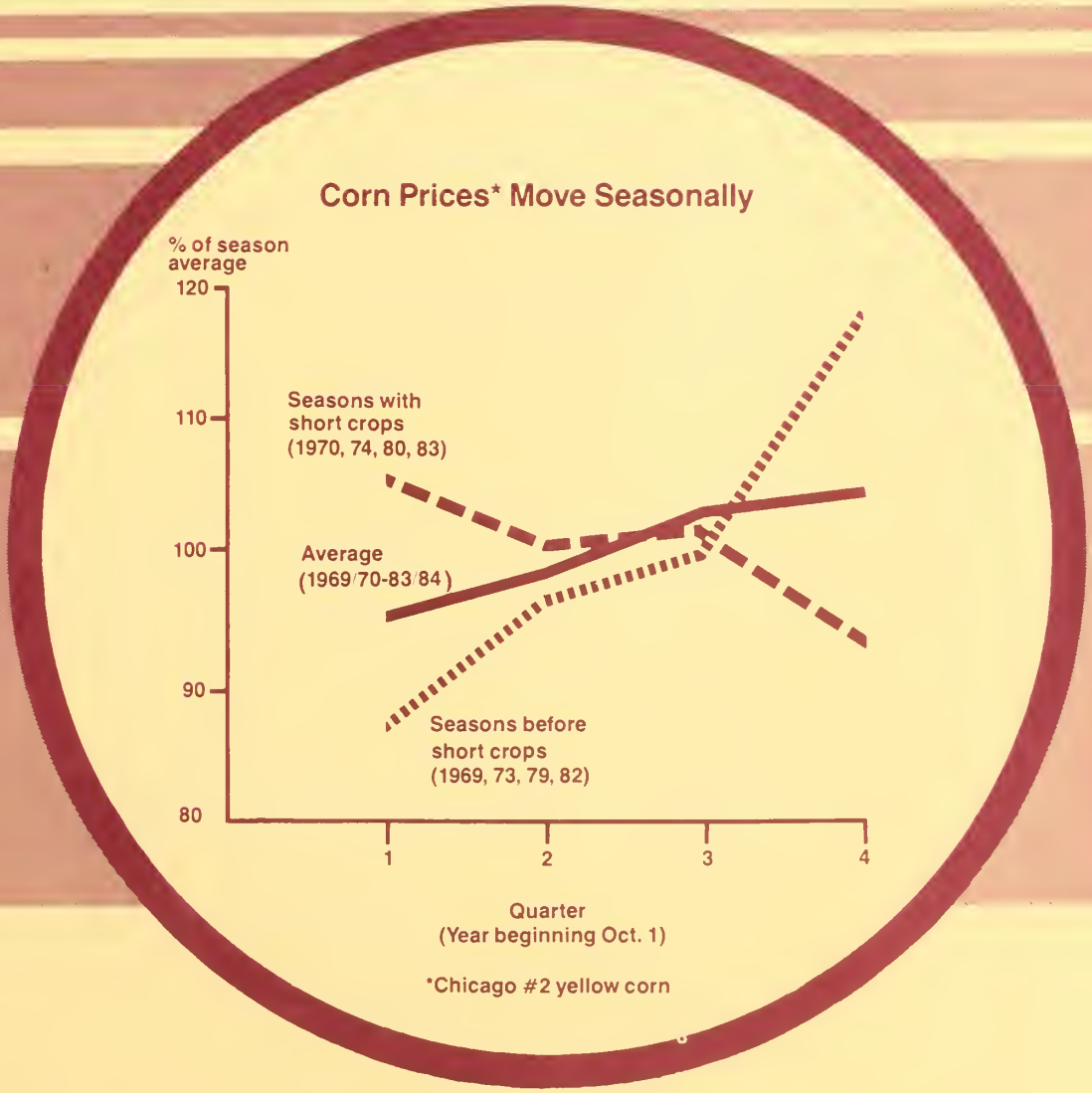

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Situation Coordinator
Sam Evans (202) 447–8444

Principal Contributors
Sam Evans
Shirley Frye (202) 447–8776 (Statistical)
Janet Livezey (202) 447–8444 (FSI)
George Allen (202) 447–8444 (Feed Demand)
James Cole (202) 447–8857 (World)

Electronic Word Processing
Shawn Irving

National Economics Division
Economic Research Service
U.S. Department of Agriculture
Washington, D.C. 20250

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SUMMARY

The 1984 U.S. corn crop is an estimated 7.53 billion bushels, up from last year's unusually small 4.17 billion. Stocks on October 1 were 722 million bushels, the smallest in 8 years. The total corn supply for 1984/85 is 8.25 billion bushels, 13 percent above last season.

Supply and use forecasts imply that corn stocks could top 1.1 billion bushels next October 1, with most of the increase likely in free stocks. As a result, the farm price for 1984/85 is expected to average between $2.65 and $2.95 a bushel, down from $3.20 in 1983/84.

Feed and residual use of corn in 1983/84 was an estimated 3.73 billion bushels, the smallest since 1976/77. Although the number of grain-consuming animal units was about unchanged from the previous two seasons, tight livestock feeding margins and low wheat prices cut the corn feeding rate substantially. Lower corn prices should boost the feeding rate this season, and feed use is forecast at 4 billion bushels. U.S. corn exports totaled 1.87 billion bushels in 1983/84, virtually unchanged from 1982/83, but 19 percent below the 1979/80 peak. For 1984/85, exports are likely to be around 2.1 billion bushels, with the increase due mainly to heavy buying by the USSR to make up for its crop shortfall. The USSR took about one-seventh of U.S. corn exports last season; the share will rise this season.

This year's sorghum crop is estimated at 813 million bushels, up 70 percent from 1983. Stocks on October 1 were 250 million bushels, 150 million below a year earlier. Thus, the sorghum supply for 1984/85 is 1.06 billion bushels, a fifth more than last season. Feed and residual use of sorghum dropped more than 25 percent in 1983/84, as wheat was lower priced on a feed-value basis for most of the season. Feed use should rebound this season as sorghum becomes more price-competitive with wheat, and if cattle on feed increase as expected in the Southern Plains. Nevertheless, stocks will likely be substantially higher at the end of the season, topping 350 million bushels. As a result, farm prices will be lower, averaging between $2.40 and $2.55 a bushel, compared with $2.75 last season.

The barley supply for 1984/85 is record-high while the oat supply is one of the smallest on record. Barley farm prices are expected to average between $2.20 and $2.40 a bushel, compared with $2.50 in 1983/84. Less oats will be fed this season because of the small supply. Farm prices are expected to average between $1.60 and $1.80 a bushel, compared with $1.69 last season.

World coarse grain production for 1984/85 is forecast at 789 million tons, up 100 million from last year. However, foreign production, estimated at 557 million tons, is up only 4 million. Led by an expected rebound in South Africa, output in major foreign exporting countries is up about 10 percent from last year. Production by major importers is lower because of an estimated 21-million-ton drop in the USSR. On the other hand, record production is likely in the European Community.

FEED GRAIN SUPPLY AND USE

Total feed grain production in 1984 is an estimated 232 million metric tons, 71 percent above 1983. Most of the feed grain base idled under the 1983 acreage reduction and payment-in-kind (PIK) programs was brought back into production this year. Around 38 million acres were in conserving uses last year; this year, about 5 million acres were idled. Feed grain yields also bounced back, to 2.22 tons per acre from 1.7 tons in 1983.

The total feed grain supply for the 1984/85 marketing years (October-September for corn and sorghum; June-May for barley and oats) is an estimated 264 million tons, about 30 million more than for 1983/84. This season's smaller beginning stocks offset much of the gain in production.

Feed grain disappearance during 1984/85 is forecast at 218 million tons, 8 percent more than last season. Exports of 61.3 million tons are expected, about 6 million more than last season. Heavy buying by the USSR has brightened export prospects. Lower grain prices are likely to raise livestock feeding rates, so feed use this season could increase 7 percent, to around 125 million tons.

These supply and use forecasts imply larger feed grain stocks at the end of the 1984/85 season. Ending stocks are forecast at nearly 46 million tons, more than 14 million above the 1983/84 carryout, but well below ending stocks for 1981/82 and 1982/83. Most of the increase will be in the free stocks category. As a result, feed grain prices generally will be lower this season.

Total feed grain stocks on October 1 were 44.3 million tons, 59 percent below a year earlier. The available supply going into the fall and winter totaled 255 million tons (October 1 stocks plus corn and sorghum production), compared with 226 million on October 1, 1983.

Corn

Crop Up 80 Percent

The 1984 corn crop is estimated at 7.53 billion bushels, up from 4.17 billion in 1983. Acreage planted to corn totaled 79.8 million this year, and 71.1 million are being harvested for grain. In 1983, 51.4 million acres were harvested, as 32 million acres of the corn base were idled under the acreage reduction and PIK programs. An estimated 4.2 million acres were idled under the 10-percent acreage reduction program for 1984.

The national average yield of corn is estimated at 105.9 bushels per harvested acre this year, about 5 percent below trend. Still, the 1984 yield is the fourth highest on record and is 30 percent greater than 1983's abnormally low yield. Yields in the Corn Belt, although well above 1983, are way short of those realized in 1981 and 1982. In particular, the yield in Missouri, estimated at 78 bushels, is a fourth below the 1981-82 average. Hot, dry weather during July and August cut the Missouri yield; dry weather in August generally affected yields in the Corn Belt.

Stocks At 8-Year Low

Stocks of corn on October 1, 1984, were an estimated 722 million bushels, down from year-earlier stocks of 3.1 billion, and the smallest since 1976 when the carryover was only 400 million bushels. As of October 1, an estimated 425 million bushels were in the farmer-owned reserve (FOR), and 201 million were owned by the Commodity Credit Corporation (CCC), leaving free stocks at 96 million bushels. Effects of these small free stocks on the market were blunted by large wheat supplies and the harvest of an estimated 800-900 million bushels of new-crop corn before October 1. Available old-crop supplies also may have been supplemented by the "rotation" of corn in the FOR. Within 30 days of harvest, farmers could have removed old-crop corn from the reserve and had 15 to 30 days to replace it with new-crop grain.

Adding October 1 stocks to estimated corn production gives a total supply of 8.25 billion bushels for 1984/85, over 960 million greater than for 1983/84. However, during the 5 years prior to 1983/84, the supply averaged 9.1 billion bushels. Whereas new-crop production represented only 57 percent of total supply for 1983/84 and averaged 84 percent of supplies during 1978/79-1982/83, it accounts for 91 percent of the supply for 1984/85. This extreme reliance on new-crop production created the potential for a volatile weather market in 1984/85, but that potential

largely dissipated as 1984 production prospects stabilized.

Use To Rebound

Total use of corn in 1984/85 is forecast at 7.13 billion bushels, compared with 6.57 billion in 1983/84. Use last season was the smallest since 1977/78, primarily because of corn's high price relative to competing wheat and to livestock prices, which lowered feeding rates. The strong dollar also limited U.S. exports. Although forecast use for 1984/85 is 9 percent above last season's total, it is still somewhat below the 7.24 billion bushels used on average during 1978/79–1982/83.

Increased exports could account for more than 35 percent of the gain in total use over 1983/84. Corn used in food, seed, and industrial (FSI) uses is expected to continue its steady growth, advancing another 75 million bushels. The feed and residual use of corn will likely recover from last season's low level and account for nearly 50 percent of the gain.

Higher Feeding Rate Likely in 1984/85

Feed and residual use of corn in 1983/84 was an estimated 3.73 billion bushels, the smallest since 1976/77. Grain-consuming animal units (GCAU's) were estimated at 78.1 million, marginally below 1982/83 and slightly above 1981/82. A smaller number of cattle on feed accounted for all of the decline in GCAU's. The regional distribution of cattle on feed also affected corn use. Compared with 1982/83, more cattle were on feed in major wheat producing areas in the Southern Plains and Southwest, while fewer cattle were in Corn Belt feedlots.

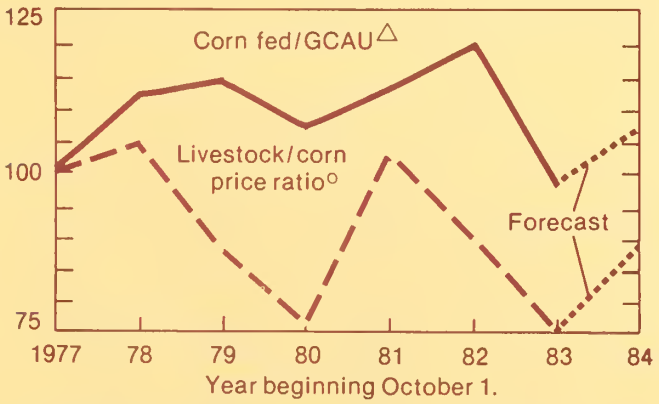
During 1983/84, an estimated 1.21 metric tons of corn were fed per GCAU, the lowest feeding rate since 1976/77's 1.19 tons. In 1982/83, an unusually high 1.46 tons of corn were apparently fed per GCAU. However, the 1982/83 feeding rate appears high; livestock feeding margins were below those of 1981/82 and below some earlier years when feeding rates were lower. During the five seasons prior to 1982/83, the corn feeding rate averaged 1.33 tons.

There are two important reasons for the relatively low corn feeding rate in 1983/84. First, livestock feeding margins were tighter, compared with 1982/83 and the preceding five seasons. Second, as during the summer of 1983, wheat prices were low enough to encourage wheat to be substituted for corn. The quantity of wheat fed per GCAU was more than triple the rates prior to 1982/83.

Corn feeding is expected to increase this season to 4.0 billion bushels. Although GCAU's are likely to be down slightly, lower corn prices relative to both livestock and wheat prices should prompt an increase in the corn feeding rate. The 1984/85 forecast feed and residual use implies a corn feeding rate of 1.31 tons per GCAU, close to the average for 1977/78–1981/82. Although corn prices will be lower this season, they will still be higher relative to wheat and other feed grains than during 1977/78–81/82.

Corn Feed Use Projection Based on Higher Feeding Rate

1977 = 100



△ Index, 1977 = 100

○ Indices (1977 = 100) of hog/corn and steer/corn price ratios weighted by GCAU's from hogs and cattle on feed, respectively.

Grain-consuming animal units (Oct.-Sept.)

Item	1981/82	1982/83	1983/84	1984/85 1/
	Million units			
Dairy cattle	12.3	12.4	12.5	12.1
Cattle on feed	16.3	18.4	17.8	17.9
Hogs	20.2	20.3	20.5	19.7
Poultry	21.8	20.6	20.6	21.1
Other	6.9	6.8	6.7	6.7
Total	77.5	78.5	78.1	77.5

1/ Forecast 11/13/84.

Grain fed per GCAU and price ratios 1/

Item	77/78-81/82	82/83	83/84	84/85 2/
		Metric tons		
Grains fed/GCAU	1.66	1.89	1.66	1.69
Corn fed/GCAU	1.33	1.46	1.21	1.31
Wheat fed/GCAU	.05	.10	.17	.07
Price ratios		Ratio		
Livestock/grain 3/	1.13	1.05	.93	---
Wheat/corn 4/	1.38	1.10	1.07	---
Barley/corn 4/	.90	.73	.76	---
Oats/corn 4/	.56	.46	.54	---
Sorghum/corn 5/	.92	.94	.86	---

1/ Grains include feed grains and wheat; year beginning October 1. 2/ Forecast 11/13/84. 3/ Index of livestock and product prices divided by index of feed grain prices. 4/ Farm price per bushel, June-September. 5/ Crop year farm prices.

Soviet Purchases Boost Export Prospects

U.S. corn exports for 1983/84 totaled 1.87 billion bushels, virtually unchanged from 1982/83, but nearly 19 percent below the 1979/80 peak of 2.43 billion bushels. The decline since 1979/80 has resulted mainly from reduced shipments to the European Community (EC), primarily reflecting expansion of the EC wheat crop and, until recently, rising protein imports. Meanwhile, U.S. exports to Asian countries trended up--Japan, Korea, and Taiwan combined took 41 percent of U.S. corn exports last season. Japan alone took about 29 percent. The drought-reduced South African grain crop boosted U.S. exports to Japan.

The Soviet Union accounted for about 14 percent--around 255 million bushels--of U.S. corn exports in 1983/84. During the last decade, the Soviet share of U.S. corn exports has been highly variable, ranging from about 4 percent to 24 percent. Sales of U.S. corn for delivery to the USSR during 1984/85 have been heavy in recent months. Through November 1, outstanding sales were about 280 million bushels, and 50 million were shipped in October. Additional Soviet purchases are expected.

Increased exports to the USSR, among other factors, should boost U.S. corn exports to 2.08 billion bushels this season, 11 percent above 1983/84. Other factors behind the export forecast are examined in the World Coarse Grain section of this report.

Stocks To Build; Prices Fall

Forecasts of corn supply and use imply 1984/85 ending stocks will rise to nearly 1.13 billion bushels, 56 percent above stocks this October 1. Most of the increase will be in free stocks, as FOR and CCC stocks are likely to rise only slightly. Free stocks could be around 470 million bushels at the end of this season.

The farm price for 1984/85 is expected to average between $2.65 and $2.95 a bushel, down from $3.20 for 1983/84. The national average loan rate is $2.55 a bushel and the target price is $3.03. Farm prices are expected to average well below the target during October-February, resulting in a sizable deficiency payment to corn growers who participated in the 10-percent acreage reduction program for 1984/85.

Corn prices are expected to more closely follow the typical seasonal pattern this year than during the past two seasons, which were dominated by the PIK program and the 1983 drought. During 1969/70-1983/84, corn prices at Chicago averaged 95 percent of their (simple) season average during October-December and 104 percent of the season average during July-September. A steady increase in average quarterly prices was noted throughout the season; prices in the

Leading importers of U.S. corn, crop year, 1980/81-1983/84

Rank	1980/81	1981/82	1982/83	1983/84
1	Japan	Japan	Japan	Japan
2	USSR	USSR	Mexico	USSR
3	Spain	Spain	Korea	Korea
4	Mexico	Korea	USSR	Taiwan
5	Portugal	Portugal	Taiwan	S. Africa

last quarter averaged about 10 percent above the harvest quarter.

The past two seasons were fairly typical of those ending or beginning in a drought or short-crop year. Toward the end of 1982/83 (the summer of 1983), prices rose sharply as the effects of the drought and PIK were recognized; in contrast, prices during 1983/84 were initially high, but then fell late in the season.

FOR Unlikely To Be Tapped

As of late October, about 420 million bushels of corn were in the FOR. About 70 percent was in Reserve V with the remainder in Reserve IV. The release or trigger price for Reserve V is $3.25 a bushel; for Reserve IV it is $3.15. However, the loan rate for 1982-crop corn in Reserve V is $2.90 a bushel, and accumulated interest charges are 35 to 45 cents a bushel. Interest is charged for the first year of the FOR contract and during times the reserve is in release status after the first year. Thus, the cost of redeeming 1982-crop corn in Reserve V is $3.25 to $3.35 a bushel on a national average basis. Barring expectations of a crop shortfall in 1985 or exceptionally strong demand, the odds of drawing grain from the FOR this season, especially Reserve V, appear small.

Net Income Down in 1984/85

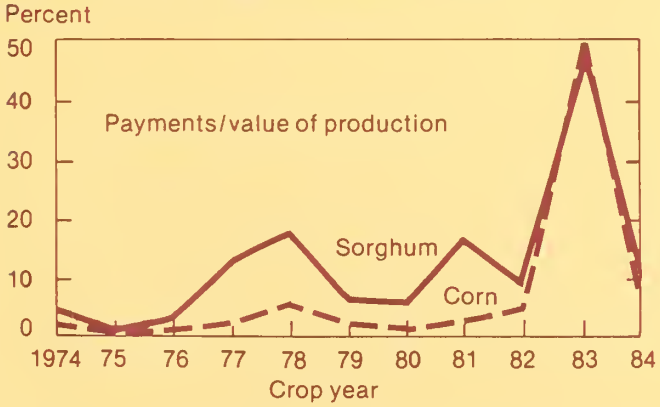
The out-of-pocket costs of producing the 1984 corn crop were up slightly from 1983 on a per acre basis, but this year's higher yield lowered costs per bushel. Cash expenses per planted acre are estimated at $221, compared with $211 last year. Costs per bushel are around $2.10 this year, compared with $2.62 in 1983. These costs do not include charges for capital replacement and land and do not include a return to labor or to management.

This season's lower farm price and smaller total Government payments will cause corn growers' net returns above cash expenses to drop sharply from 1983/84. Net returns in 1984/85 will likely be near those of 1982/83. Net returns and direct payments in 1983/84 were boosted by the PIK program.

Acreage Reduction Program

The 1985 feed grain program features a 10-percent acreage reduction. Signup for the program began October 15 and will run through March 1, 1985. Producers may request 50 percent of the projected deficiency

Farm Value of Grain Production To Rise in 1984/85; Government Payments To Fall



Farm value is season-average price times production. Government payments include deficiency, diversion, disaster, for storage, and market value of PIK in 1983/84. 1984/85 forecast as of October 24.

Returns above cash expenses in U.S. corn production

	81/82	82/83	83/84	84/85 1/
	Billion dollars			
Gross income 2/	20.8	23.0	20.0	22.6
Farm value	20.3	22.1	13.3	21.1
Direct payments	.5	.9	6.6	1.5
Cash expenses 3/	15.2	15.6	11.7	16.0
Net returns	5.6	7.4	8.3	6.6
	Dollars per bushel			
Net returns 4/	.69	.90	1.99	.88

1/ Forecast as of November 13. Mid-point of season average price range was used to estimate income. 2/ Farm value (season average price times production) plus sum of deficiency, diversion, disaster, and payment-in-kind. PIK payments for 1983/84 were valued at the average farm price and totaled around $5.6 billion. 3/ Cash costs of producing and marketing an acre of corn planted for grain times U.S. planted acreage. Costs of idling an acre under acreage reduction programs were assumed to be 20 percent of variable cash costs (or about $25 per acre). 4/ Total net returns divided by U.S. production.

payment in advance. The projected deficiency payment for corn is 47 cents a bushel, 1 cent below the maximum payment rate. Participation in the 1985 program should match or exceed the 55-percent rate of 1984. The 1984 program also featured a 10-percent acreage reduction. However, farm prices exceeded the $3.03-a-bushel target price during the enrollment period last year. This year, the target price is still $3.03, but farm prices are much lower.

Corn acreage in 1985 may not be materially different from this year's level. If a trend yield is achieved, the supply could exceed that for 1984/85 even if harvested acreage turns out a little smaller.

Sorghum

Supply Up Sharply for 1984/85

This year's sorghum crop is estimated at 813 million bushels, a 70-percent increase over 1983's abnormally small crop. Harvested acreage was sharply higher as much of the land idled under the PIK program was brought back into production. Acreage in conserving uses was about 5 million less. The average yield of 57.3 bushels an acre was nearly 9 bushels larger than in 1983, but was below yields in 1981 and 1982.

Sorghum acreage continues to increase in the Southern States. This year, 1.8 million acres were harvested in the Southeast and Delta regions, nearly 13 percent of the national total. Five years ago, these regions accounted for less than 4 percent of total sorghum acreage. Farmers in these regions have found that sorghum's resistance to drought makes it a desirable crop to double crop with wheat. Continuation of this trend could result in smaller soybean acreage in the South and reduced dependence on feed grain supplies from outside the region.

Stocks of sorghum on October 1 were 250 million bushels, compared with 400 million a year earlier. Statistically, free stocks were negative on October 1 because FOR stocks were 178 million bushels and CCC stocks were 89 million. However, old-crop supplies were supplemented by harvest of the new crop which, for example, was 67 percent complete in Texas by September 30. Texas produces nearly a fourth of the Nation's crop. As was true for corn, old-crop sorghum could have been rotated from the reserve and replaced with the new crop within the reserve rotation period. This would have temporarily raised free stocks.

Another indication that the tight sorghum free stocks were more statistical than real is that the monthly farm price fell from a peak of about $2.85 a bushel in May to less than $2.40 in September.

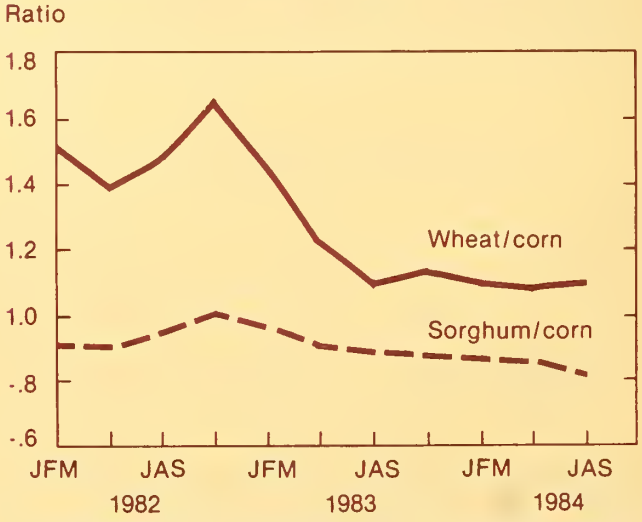
The supply of sorghum for 1984/85 is estimated at 1.06 billion bushels, a fifth above 1983/84. The larger supply is expected to result in an expansion in sorghum feeding this season.

Use To Rise in 1984/85

The feed and residual use of sorghum in 1983/84 was 373 million bushels, down from 507 million in 1982/83. Sorghum was apparently replaced with wheat in livestock and poultry feeding, particularly in the Southern Plains. On a feed-value basis, wheat was lower priced during most of 1983/84. This competition caused the farm price of sorghum to be unusually low relative to corn. This summer, sorghum farm prices were only 81 percent of the corn price, compared with 90-94 percent during the previous two summers.

The feed and residual use of sorghum is likely to increase during 1984/85 to 450

Corn Farm Price Rises Relative to Wheat and Sorghum



million bushels. Sorghum will be more price-competitive with wheat, and livestock feeding margins should widen as well. In addition, more cattle are likely to be on feed in the Southern Plains.

Sorghum exports are expected to increase marginally this season to 250 million bushels. During 1983/84, exports totaled 246 million bushels. The major markets were Mexico and Japan; Mexico took nearly 45 percent of U.S. exports while Japan took nearly 25 percent.

Larger Stocks; Lower Prices

Stocks of sorghum next October 1 are forecast at 353 million bushels, more than 100 million above the 1983/84 carryout. Season-ending stocks averaged 240 million bushels during the past 5 years. Larger stocks usually mean lower prices, and the farm price of sorghum is expected to average between $2.40 and $2.55 a bushel in 1984/85, down from $2.75 for 1983/84. The sorghum loan rate for 1984/85 is $2.42 a bushel, or 95 percent of the corn loan rate. The target price is $2.88 a bushel, well above the average farm price likely for October-February. Consequently, sorghum producers in compliance with the 10-percent acreage reduction program should receive a deficiency payment.

The target price for 1985/86 will again be $2.88 a bushel. Compared with last year, farm prices have fallen well below the target. This should give growers a substantial incentive to enroll in the 10-percent acreage reduction program for 1985. As a result, sorghum acreage could decline in 1985.

Barley

Record Supply and Use in 1984/85

Total disappearance of barley during 1983/84 was a record 543 million bushels. Exports amounted to 92 million bushels; FSI use was 172 million, and feed and residual disappearance was 279 million. Although no individual category of use was a record, total use exceeded the previous record of 510 million bushels in 1970/71.

Use during 1983/84 left carryover stocks of 189 million bushels on June 1, down 28 million from a year earlier but substantially larger than carryover stocks in either 1980/81 or 1981/82. About 105 million bushels of this year's carryover stocks were in the FOR (95 million) and the CCC inventory (10 million).

This year's barley crop is estimated at a record 606 million bushels. An estimated 11.2 million acres were harvested, and the average yield was 53.9 bushels an acre. The total supply of barley for 1984/85 is a record--up more than 70 million bushels from last year's record 732 million. Last year, the United States imported 7 million bushels; with the value of the dollar so high relative to the Canadian dollar, the United States will probably import some barley this crop year even with the record domestic supply.

Total use in 1984/85 is expected to top last year's record. Exports most likely will exceed last year's 92 million bushels, as foreign crops, especially Canada's, are smaller. A larger corn supply this year probably will mean less opportunity for barley to further replace corn in livestock and poultry feeding, leaving domestic feed use about the same as 1983/84.

Total barley disappearance during June-September was 215 million bushels, 2 million above the same period in 1983/84. Use for all of 1984/85 is expected to total about 550 million bushels, leaving stocks of about 255 million next June 1.

The farm price of barley was above a year earlier in June and July. However, during August-October, prices were below a year earlier. Farm prices probably averaged around $2.35 during June-October, 25 cents below the target price. Barley growers who participated in the acreage reduction program will receive a deficiency payment. The average price received by farmers for 1984/85 is expected to range from $2.20 to $2.40 a bushel, compared with $2.50 for 1983/84. The spread between malting and feed barley prices was unusually narrow in 1983/84, and it remained narrow this summer. The spread may widen as lower corn prices start to pull down feed barley prices this fall.

Oats

Smaller Supply for 1984/85

The 1984 oat harvest is an estimated 472 million bushels, down slightly from last year, but 20 percent less than the 1982 crop. Oat stocks on June 1 were 181 million bushels. So, the supply for 1984/85 is 673 million bushels, one of the lowest on record. This season's supply will include imports of 20 million bushels, as the strong U.S. dollar will make this country a good market for Canadian oats. Last season, 30 million bushels were imported, the largest quantity since 1953/54.

The small oat supply, combined with ample supplies of corn and hay and fewer cows milked, is expected to cause total oat use to fall to a record-low 483 million bushels this season. Feed and residual use is forecast at 400 million bushels, 66 million below 1983/84. Other uses are likely to be virtually unchanged. During June-September, use totaled 185 million bushels, compared with 203 million a year earlier.

Disappearance of 483 million bushels would leave 1984/85 ending stocks (June 1, 1985) at 190 million bushels. The average farm price for 1984/85 is expected to be between $1.60 and $1.80 a bushel, compared with $1.69 last season. The simple average farm price for June-October was around $1.70 a bushel, nearly 20 cents above a year earlier, and above the $1.60 target price.

Hay

Record Crop

The 1984/85 hay crop is estimated at a record 154.1 million tons, nearly 13-1/2 million above 1983. The area harvested is placed at 62.3 million acres, the largest since 1968. This year's yield of 2.46 tons per acre is slightly below the 1982 record. The larger crop is barely offsetting the large reduction in stocks during 1983/84. Stocks on May 1, 1984, were 16.8 million tons, compared with 28.1 million a year earlier. The supply of hay for 1984/85 is around 171 million tons, about 1 million above last season.

The number of roughage-consuming animal units (RCAU's) is down 1-1/2 percent from 1983/84; RCAU's for 1984/85 are an estimated 89.4 million. A decrease in the number of milk cows is the primary reason for the decline. The hay supply per RCAU is 1.91 tons this season, up slightly from 1983/84. During 1980/81-1983/84, hay use per RCAU was 1.63 tons. At that rate, hay disappearance during 1984/85 would total about 146 million tons, and stocks on May 1, 1985, would be around 25 million.

During May-September, hay prices averaged $75.80 a ton, but the price in September was $71.90, down $13 from the May average. The season average price will likely fall short of the $76.20-a-ton for 1983/84.

FOOD AND INDUSTRIAL DEMAND

FSI Demand Likely To Surpass a Billion Bushels

Food, seed, and industrial (FSI) use of corn is expected to reach 1,050 million bushels in 1984/85, 75 million more than used this past year and double use 10 years ago.

Wet-millers will grind at least an additional 35 million bushels in 1984/85 for sweeteners alone. High fructose corn syrup (HFCS) will again account for nearly all of the increase. Recent decisions by PepsiCo Inc. and Coca-Cola Co. to allow 100-percent substitution of HFCS for sucrose in their bottled drinks have ensured another tight supply-demand situation in 1985 for the HFCS market. New capacity will be coming on line in 1985 and should be sufficient to handle demand. Many HFCS buyers have already negotiated with corn refiners for all or part of their 1985 purchases.

Corn starch output may increase again in 1984/85. Starch production declined during the recession, but has been on the rise ever since. Shipments jumped by 8 percent in 1983/84. Most corn starch is used in industrial products such as paper, textiles, and adhesives. The paper industry is the largest consumer; manufacturers use about 28 pounds of starch for every ton of paper produced.

Alcohol producers may use an additional 40 million bushels of corn in 1984/85--all for fuel use. New dry-milled plants will be coming on line to boost production capacity.

Corn: Food, seed, and industrial use 1/

Product	81/82	82/83	83/84*	84/85**
	Million bushels			
Wet-milled 2/	510	540	585	620
Dry-milled 3/	162	163	161	160
Alcohol 4/	120	180	210	250
Seed	19	15	19	20
Total	811	898	975	1,050

1/ Year beginning October 1. 2/ HFCS, glucose, dextrose, and starch. 3/ Includes alkaline cooked products for Mexican foods and corn snacks. Dry-milled products include grits, meal, and flour. 4/ Fuel, industrial, and beverage alcohol. *Estimate. **Forecast.

A major dry-milled plant that shut down in 1983/84 will be operating again this year. Some wet-millers may slightly expand production capacity. Fuel alcohol sales and profitability in 1984/85 will benefit from lower corn prices and an increase in the Federal excise tax break on ethanol-gasoline blends.

Corn use for dry-milled and alkaline-cooked products has remained steady over the past few years. Increased sales of some corn products have been offset by decreases for others. Corn-based cereals, snack foods, and Mexican foods have made tremendous gains in output. But use of brewers' grits, a major product of the dry-milled industry, has dropped steadily. Beer producers have been using more dextrose, at the expense of grits, as a brewing adjunct. Also, domestic beer sales have leveled off in recent years.

FEED DEMAND

Demand for feed grains this spring and summer was down from a year earlier, due mainly to fewer cattle on feed, decreased farrowings, fewer cows milked, and reduced feeding per animal unit. Feed use in the broiler industry was up this year, but not enough to offset the above.

A significant regional shift in feed demand also occurred this year. Placements of cattle on feed in the Southern Plains exceeded a year earlier, but placements in the Corn Belt dropped off sharply. Wheat was available at relatively favorable prices in the Southern Plains States, so the cost of feeding did not rise as much as in the Corn Belt where mostly corn is fed.

Lower feed grain prices this fall could stimulate some increase in placements of cattle on feed, particularly in the Corn Belt. Feed costs in the Corn Belt probably will become competitive with the Plains States this fall and winter. On October 1, cattle on feed in the 13 reporting States were 6 percent above a year earlier.

Pork production this fall is running a little above earlier expectations. With forecast hog prices trimmed recently, there probably will be less retention of breeding stock than thought earlier. This would result in more pork output in the near term and less a year from now.

Broiler production in the summer quarter was a little below the anticipated level. For all of 1984, federally inspected broiler

Animal product output and prices, October 1 crop year

Item	81/82	82/83	83/84	84/85
Output	Percentage change from year earlier			
Beef	0.5	3.1	2.3	-2.6
Pork	-7.4	-.6	2.9	-3.8
Poultry	1.7	2.7	1.4	5.8
Milk	2.3	3.0	-1.2	-.7
Prices:	Dollars per cwt			
Choice steers 1/	64.55	61.93	64.62	63-69
Barrows and gilts 2/	52.31	50.94	47.50	47-53
Broilers 3/	44.10	NA	56.90	48-54
Milk 4/	13.62	13.58	13.33	12.95-13.45

1/ Omaha, 900-1,100 pounds. 2/ 7 markets, wholesale. 3/ 12-city average. 4/ Average farm price. NA=Not available.

production may be up about 4 percent from a year earlier, and an increase of around 5 percent is likely next year.

Milk production will likely drop again this feeding year. After a 3-percent gain in 1982/83, output was down 1.2 percent last season and could fall by less than 1 percent during 1984/85.

WORLD COARSE GRAIN SITUATION

Large production increases in a number of the major coarse grain producing nations and record production in others could boost global coarse grain production in 1984/85 to record levels. Because of severe stock drawdowns in the preceding year, and only average increases this year, world stocks in 1984/85 are projected to fall short of the 1982/83 record. An increase in world coarse grain trade is forecast, due largely to record Soviet purchases brought on by a sixth consecutive poor harvest, and continued aggressive trade policies by the European Community.

World Production Expands

World coarse grain production in 1984/85 is forecast at a record 789 million tons, up 100 million from a year earlier. Only 4 million tons of the increase is in foreign production, estimated at a record 557 million tons. Estimated U.S. production, at 233 million tons, is the third highest on record.

Competition among the major foreign coarse grain exporting countries has intensified this year. Production in these nations (Argentina, Australia, Canada, South Africa, and Thailand) is forecast at 63.3 million tons, up 10 percent from the previous year. The bulk of the expected increase lies in South African production (forecast at almost 10 million tons) where drought conditions have eased to the extent that yields in 1984/85 are expected to double those of the 2 previous years, when the country became a net importer of coarse grain.

Major importers (Eastern Europe, EC-10, Other Western Europe, Mexico, the USSR, and others) are forecast to produce 270 million tons of coarse grains in 1984/85, almost 4 million below 1983/84. However, record production (72.8 million tons) in EC-10 countries is projected, 8 million more than a year earlier. Production of this magnitude stems from increased use of high-yielding varieties and ideal weather conditions through the summer.

Soviet Production Falls Dramatically; China Breaks Previous Record

A 500,000-hectare reduction in the Soviet coarse grain area estimate and a 14-percent decline in the estimated coarse grain yield, indicate a crop of only 84 million tons--21 million less than 1983/84. Thus, the coarse grain decline is contributing to the sixth consecutive poor total grain harvest for the Soviets, in contrast to the year before when coarse grain output rose substantially.

The forecast for China's production has grown almost monthly during the late summer months and into the fall. This year's harvest, now estimated at a record 95 million tons, is almost 3 million above 1983/84, and 11.5 million above 1982/83.

Global Supplies Fail To Reach New High

Continued high coarse grain use in 1983/84, along with a sharp decline in global production for the year, caused ending stocks to plummet by 51 percent to around 68 million tons. Increased production in 1984/85 will allow for some modest rebuilding of stocks, with 86 million tons likely by the end of the year. As a result, global supplies (production plus beginning inventories), an estimated 858 million tons, will fall short of the 1982/83 record by about 4 percent.

Coarse Grain Trade Prospects Improve

Global trade prospects are enhanced by significant increases in coarse grain use and massive Soviet imports brought on by this year's poor production and forecast high coarse grain feed requirements. The demand for coarse grains in 1984/85 may be tempered somewhat by the forecast glut of exportable world wheat supplies. For the second consecutive year, U.S. trade prospects are likely to improve both in absolute and relative terms.

World coarse grain trade (excluding intra-EC trade) in 1984/85 is forecast at 99.5 million tons, up from 91 million last year.

Soviet coarse grain imports are forecast at 23 million tons for the year, only slightly short of the record set in 1980/81 (July–June year). Grain purchases by the Soviets have slowed somewhat with the onset of fall, but record total grain imports of 50 million tons are still forecast.

Prospective West European imports of only 11.6 million tons result from coarse grain production rising about 15 million tons from 1983/84, along with intensified feeding of domestic grains and imported nongrain feeds. Japanese imports are forecast to improve marginally to just over 21 million tons.

China's coarse grain imports are forecast at only 300,000 tons in 1984/85, due to continued production gains. China has not purchased major amounts of coarse grain from the United States since March 1983, despite the U.S.–China Long-Term Grain Agreement that requires purchases of almost 1 million tons annually.

On balance, U.S. coarse grain exports in 1984/85 are forecast at 61.3 million tons, up from about 56 million a year earlier. Further, the U.S. share of the market, at 61 percent, is up slightly from the average of the previous 2 years. Continued low coarse grain prices and large Soviet purchases have boosted sales that otherwise may have been sluggish.

Dynamic Corn Sector Adjustments to Changes in Selected Supply and Demand Variables

Paul C. Westcott

Agricultural Economist
Economic Research Service

Abstract: A quarterly econometric forecasting model of the U.S. agriculture sector simulated the magnitude and timing of corn sector adjustments to various impacts. Results reflect a complex set of cross-commodity linkages and underlying lag structures due to short-run economic, biological, and institutional constraints. Following a first round of livestock sector adjustments and feedbacks to the corn sector, a second round of smaller livestock sector adjustments in the opposite direction takes place. This results in a damped cyclical convergence of corn sector variables towards their base scenario levels, with the lengths of adjustments related to the size of the original impact.

Keywords: Corn, quarterly model, impact analysis, model simulations, scenarios, dynamic adjustments, cross-commodity linkages.

Corn represents one of the largest and most important sectors within the agricultural economy. Over the last 4 years, cash receipts from corn have averaged the largest of any crop (3), representing about 18 percent of crop receipts and about 9 percent of total cash receipts. 1/ Because corn accounts for over 80 percent of feed grain fed domestically (1), it is critical in the linkages within agriculture

1/ Numbers in parentheses refer to references at the end of the article.

among various crops and between crops and livestock. Consequently, events which affect corn are usually carefully watched by other sectors within agriculture.

This article examines some of the quarterly adjustments in the corn sector resulting from changes in selected supply and demand variables. Dynamic aspects of the interrelationships between the corn sector and other sectors are illustrated by the quarterly adjustment patterns that follow the initial impact. These dynamic adjustments reflect a complex set of cross-commodity linkages and underlying lag structures in agricultural sectors due to economic, biological, and institutional constraints. Results can be used along with other available information to help commodity analysts incorporate these commodity interrelationships into forecasts and policy analyses.

The analysis is based on various simulations of a quarterly econometric forecasting model of the U.S. agriculture sector being developed in ERS (4). A base solution of the model is solved for equilibrium values over a 32-quarter historical period. Alternative scenarios are then simulated by changing selected variables in the first quarter of the fourth crop year--to be referred to as the impact quarter. Corn sector adjustments are then determined by comparing the alternative scenario model solution to the base solution. Nineteen quarters following the impact quarter were simulated, covering 5 marketing years.

Four alternative scenarios were simulated to assess the effects of various impacts. The first two scenarios represent alternative assumptions regarding variables within the corn sector. Scenario 1 subtracts 5 bushels per acre from corn yields in the impact quarter. Scenario 2 adds 100 million bushels to corn exports in the impact quarter. The second two scenarios represent alternative assumptions regarding variables in other commodity sectors, thereby depicting some of the cross-commodity effects. Scenario 3 adds $10 per ton to the soybean meal price in the impact quarter, while scenario 4 adds 500,000 head to net placements of cattle into feedlots.

Scenario 1—Corn yields reduced 5 bushels per acre. After the size of corn plantings is known each year, yields become the major variable that determines production. Table 1 shows the effects on selected corn sector variables in the quarters following an assumed 5-bushel-per-acre reduction in corn yields. The initial impact on production pulls down corn supplies nearly 400 million bushels. This causes corn prices to rise about 8 cents a bushel in the impact quarter with the maximum price increase of 15 cents per bushel occurring two and three quarters later. The higher prices trigger adjustments in the livestock sector, where cattle and hog breeding herds, cattle feedlot activity, sows farrowing, and poultry production are all reduced, leading to a decline in the feed use of corn. Lower feed use offsets part of the simulated reduction in corn production, causing ending stocks after one marketing year to be 279 million bushels lower than in the base scenario (71 percent of the initial production decline).

Longer-term effects reflect continuing adjustments in the livestock sector in response to the corn price impacts and to their own price impacts resulting from the initial livestock production adjustments. In the third marketing year following the impact, the cumulative reduction in feed use raises ending

Table 1--Selected corn sector adjustments resulting from a 5-bushel-per-acre reduction in corn yields

Time period	Dynamic adjustments in: Corn feed use	Ending stocks of corn	Farm level corn price
	------- Mil. bu. -------		$/bu.
Impact quarter (0)	-16	-377	0.08
1	-24	-352	.13
2	-22	-330	.15
3	-51	-279	.15
4	-50	-228	.12
5	-52	-176	.08
6	-35	-142	.04
7	-64	-78	0
8	-47	-31	-.04
9	-40	9	-.07
10	-21	30	-.10
11	-30	60	-.11
12	-18	77	-.12
13	-10	87	-.13
14	-2	88	-.12
15	5	83	-.11
16	6	77	-.10
17	11	67	-.08
18	10	57	-.06
19	22	34	-.04

corn stocks above their base scenario levels, causing corn prices to fall below their base levels.

A second round of livestock inventory and production adjustments then occurs. These are smaller and in the opposite direction of the initial livestock responses, leading to higher corn feed use towards the end of the simulation, which slowly pulls corn prices back towards their base scenario levels.

Scenario 2--Corn exports increased by 100 million bushels. Table 2 shows the corn sector adjustments resulting from a 100-million-bushel increase in exports. A pattern of adjustments similar to that in scenario 1 occurs because a yield reduction and an export increase both remove corn from domestic supplies. However, because the initial impact is smaller in scenario 2, the resulting adjustments are smaller, and they damp out more quickly.

As in scenario 1, prices are initially higher, triggering livestock sector adjustments and reductions in corn feed use. By the end of the first marketing year, cumulative feed use reductions offset 68 percent of the export increase, leaving ending stocks only 32 million bushels lower than in the base scenario.

By the middle of the second marketing year, ending stocks begin to increase from the base solution while corn prices are lower. This compares with an additional four quarters needed in scenario 1 to offset the initial impact on supplies and primarily reflects the relative magnitudes of the two scenarios' impacts.

Also reflecting the faster return to base scenario corn supplies and prices, the second round of livestock inventory and production adjustments begins earlier. Similar to scenario 1, though, these adjustments are smaller and in the opposite direction of the initial livestock responses, leading to higher corn feeding and pulling corn prices back towards their base scenario levels.

Scenario 3--Soybean meal price increased by $10 per ton. Table 3 shows the first-year adjustments in corn feeding caused by a $10-per-ton increase in soybean meal prices in the impact quarter. There are no significant effects on other corn sector variables, and

Table 2--Selected corn sector adjustments resulting from a 100-million bushels increase in exports

Time period	Dynamic adjustments in: Corn feed use	Ending stocks of corn	Farm level corn price
	------- Mil. bu. -------		$/bu.
Impact quarter (0)	-20	-80	0.11
1	-15	-64	.08
2	-11	-53	.06
3	-22	-32	.04
4	-27	-5	0
5	-16	12	-.02
6	-8	20	-.04
7	-11	31	-.04
8	-14	44	-.06
9	-3	47	-.06
10	1	46	-.06
11	6	41	-.05
12	-1	41	-.05
13	7	34	-.04
14	5	29	-.03
15	12	17	-.02
16	3	14	-.01
17	8	5	0
18	5	0	.01
19	9	-8	.01

only small adjustments in corn feeding beyond the first marketing year.

Because of the lags involved in feed use adjustments, there is no major change in corn feeding in the impact quarter. However, in the following quarter, the feed use of corn is reduced by 5 million bushels, implying a 1-quarter interim multiplier of -0.10. This is slightly less than the single equation cross-price elasticity of -0.12 presented by Hull and Westcott in a discussion of the corn feed use equation (1), and reflects the dynamic feedback effects captured here by running the complete sector model.

By the end of the first marketing year, the cumulative reduction in corn feeding is 7 million bushels. Importantly, this negative impact confirms in a dynamic framework the conclusion drawn by Hull and Westcott (1) in a single equation framework of complementarity between corn and soybean meal in animal feeding. 2/ Additionally, even with further

2/ This is important because, as Lamm (2) shows in a study of consumer food demand, dynamic aspects of a model may lead to different conclusions than single-equation properties.

livestock adjustments beyond the first year, the net change in corn feed use remains negative through 20 quarters following the soybean meal price impact.

Scenario 4--Net cattle placements increased by 500,000 head. Table 4 shows the first-year adjustments in corn feeding caused by net cattle placements being increased by 500,000 head. Feed use of corn increases by 13 million bushels in the first quarter after the impact because more cattle are in feedlots. However, subsequent livestock sector adjustments cause corn feeding to return to near the base scenario levels by the end of four quarters. The cumulative first-year impacts imply that corn feeding increases about 0.25 percent with each 1-percent increase in net cattle placements.

As in the other scenarios, a second round of livestock sector adjustments occurs in later quarters. Corn feeding is then lower than in the base scenario, but is never affected by more than 1 percent beyond the first lag quarter.

Table 3--Corn feed use adjustments resulting from a $10-per-ton increase in soybean meal price

Time period	Dynamic adjustments in corn feed use
	Mil. bu.
Impact quarter (0)	0
1	-5.3
2	-1.3
3	-.2

Table 4--Corn feed use adjustments resulting from a 500,000-head increase in net cattle placements

Time period	Dynamic adjustments in corn feed use
	Mil. bu.
Impact quarter (0)	0
1	13.5
2	4.3
3	2.5

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Crop Quality Differences and Estimates of Corn for Feed Use

George Allen
and
Gary Nelson 1/

Abstract: Estimating corn use for feed depends on a number of factors, including livestock and poultry fed, nearby supplies of corn substitutes, geographic surplus feed grain areas, and feed demand locales. The most difficult variable to nail down is the yearly variation in the feeding value of a corn crop. Accounting for quality variations is rarely undertaken due to the many wide differences in factors that contribute to crop quality variance. This article discusses those major factors and their impact on the yearly corn balance.

Keywords: Corn, crop quality, moisture, test weights, foreign matter, kernel cracks and fines, feed and residual.

Derivation of Corn Feed Use

Corn feed and residual use is derived from supply, use, and stocks data for corn. The supply categories of the U.S. Department of Agriculture's typical corn balance sheet include beginning stocks, production, and imports. Use categories are feed and residual; food, seed, and industrial (FSI); and exports. Total use is total supply less ending stocks. Exports and FSI use are subtracted from total use to yield corn feed and residual use, for which no survey data are available, unlike the other categories. The feed and residual category is sometimes referred to as corn feed use. However, no data are available to permit the separation of the feed and residual components, and USDA reports only the sum of the two.

Many factors determine corn feed and residual use for a crop year, and it is difficult to rank their importance. The number of livestock and poultry fed is the primary determinant. The feeding rate, or bushels per animals, is also important. The rate depends on the age and weight of the animals and on the prices and supplies of alternative energy feeds. Statistical, or sampling, errors in estimates of production, stocks, and FSI use also affect the reported volume of feed and residual use.

Feed and residual use is also affected by crop quality differences caused by production decisions, seasonal weather patterns, physical characteristics, and marketing channels. In addition, the methods farmers use to measure their production and on-farm stocks, which are then reported to the USDA's Statistical Reporting Service, also affect estimated feed and residual use.

Crop Quality Factors

Production Practices

Farmers like to start planting as soon as possible after the frost-free date, since the highest yields tend to come from early planted fields. Seed corn varieties are selected on the basis of genetic characteristics judged best for a particular farm or soil. Insecticides to control soil insects are often applied at planting time; herbicides and fertilizers are applied at various stages during the growing months. Most corn rows are spaced 28 inches apart, with seed populations averaging 20,000 to 28,000 seeds per acre.

Because of possible harvesting losses from corn stock lodging and corn ear shattering,

1/ George Allen is an Agricultural Economist, Crops Branch, National Economics Division, Economic Research Service. Gary Nelson is an Agricultural Statistician, Estimates Division, Statistical Reporting Service, USDA.

combined corn is frequently harvested with an average of 22- to 30-percent moisture (with the exact level depending on weather) rather than a more stable and storable level of about 15 percent. Some excess moisture is removed by mechanical corn dryers and some with continuous forced-air circulation in small and medium-sized grain bins. Besides being very wet, many kernels will have small physical defects from the combine, and the amount of foreign material is often high. Higher-moisture corn is difficult to dry uniformly. After mechanical high-temperature drying, this corn is more susceptible to mold growth and kernel breakage, which makes it difficult to store without damage to quality.

To reduce additional quality loss following mechanical hot air drying, stored corn should be periodically checked for "hot spots". Hot spots come from small clusters of relatively wet corn or insect activity in a grain bin or silo. Left untended, hot spots act in a similar way as a rotten apple acts in a bushel basket of fruit. Mold enzyme action tends to accelerate temperature rises and spreads grain spoilage. When it's determined that a bin contains grain that's likely to go out of condition from heating or hot spots, it's necessary to break up clusters of fermenting grain by "rotating" it. This usually involves shifting grain from the affected bin to a suitable, disinfected bin via mechanical conveyors that help aerate, cool, and dry wet-hot clusters of grain.

Frequently, grain is treated with fumigants when it is first stored following the drying process. However, serious questions recently have been raised regarding residual fumigants in processed grain products. This suggests that greater care must be given to avoid insect infestation caused by mixing new grain with infected grain.

Distinguishing Physical Characteristics for Corn Quality

The marketing grades and standards used by Federal and State grain inspectors as well as private traders to identify different lots of corn are based on physical characteristics. Quality factors relate to physical appearance and measures such as the ratio of dry weight to volume; the amount of split, cracked, and heat-damaged kernels; corn color; mold growth; and amount of foreign material. Agronomists maintain that corn naturally dried in the field to 30-percent moisture is fully mature. Then, high quality is merely a matter of proper handling and conditioning.

However, a sample of 30-percent moisture will probably contain some kernels with 25 percent and some with 35 percent. Kernels with 35-percent moisture will not be fully mature and will break easily during mechanical drying. Moreover, each successive handling causes more kernel damage, which in turn can cause stored corn to deteriorate rapidly. Corn brittleness can be reduced by changing seed varieties, but this may cause lower yields. Moisture in corn is not neutral--it adds to handling costs and hastens deterioration.

Farmers' Reporting Methods for Stocks and Production

The basic data for the Statistical Reporting Service's (SRS) quarterly farm corn stock estimates are obtained from multiple-frame probability surveys in 23 corn-producing States. In the remaining States, a nonprobability mail survey is used. The multiple-frame probability survey consists of a stratified systematic sample selected from the list sampling frame maintained by each SRS State statistical office. In addition, farmers contacted in the June Enumerative Survey but not found on the list frame are surveyed quarterly and the sample expanded to compensate for the incompleteness of the list frame.

Indicators used to estimate farm stocks are direct expansion, the ratio of stocks to the farmer's production, and the ratio of the current quarter's stocks to the previous quarter's. For the January quarterly survey, each farmer in the sample is asked about corn production the previous season. Direct expansions are obtained by multiplying survey data by the reciprocal of the sampling fraction for each sample stratum and summing the strata. Stocks of corn on reporting farms are divided by the farm's corn production or previous quarter's stocks to obtain a ratio of stocks. These ratios of stocks to production or the previous quarter's stocks are based on data from matched reports (identical farms for off-quarter estimates).

SRS's Crop Reporting Board reviews the State statistical offices' findings and develops regional estimates which include the nonprobability mail survey data. State estimates are then set that will sum to the respective regional level.

Off-farm Stock Data

Each State statistical office maintains a list of commercial grain storage facilities and their storage capacities. The lists are divided into groups of similar plants and activities and each group is stratified by size. Quarterly stock estimates for each group are totaled for an estimate of all corn stored off the farm. A complete enumeration is made of the largest units, while smaller units are sampled. About 85 percent of off-farm corn storage capacity is included in the sample survey returns.

Use of Stock Data with Corn Supply Balances

Stock data measure inventories at a quarter's end. The inventory change from the beginning of the quarter is the quantity of grain removed for feed/residual use, FSI use, and export commitments. Official and unofficial reports provide information on export and FSI use, and these are subtracted from the inventory change to estimate feed/residual, the largest use category. There is no survey information to confirm the feed/residual estimates.

Efforts to identify the amount of corn used for feed rely on the reported number of livestock and poultry fed times the animals' assigned average feeding rate. Both statistics--livestock numbers and average feeding rates--are subject to estimating errors because the feeding rates themselves are subject to estimating errors and because feeding rates include all feed concentrates, of which corn may or may not be the major feed grain. Quantities of corn in a feed mix vary with seasonal supply and price levels.

To improve consumption estimates, analysts use seasonal adjustments, which partly substitute other grains for corn and which may increase or decrease daily quantities fed whenever environmental conditions warrant. Any seasonal adjustment in feeding rates must retain overall nutritional and physiological recommended minimums. Because emphasis on nutritional norms and feeding standards are used to determine feeding rates, the total consumption estimate will not reflect the corn balance sheet if a significant share of the estimated corn/nutrients evaporate. Thus, quality of a grain crop cannot be ignored when feeding estimates rely on nutritional values for each kind of consuming livestock.

The fall harvest often taxes the capacity of grain dryers beyond their limits, and some corn is never dried to a safe moisture level. Blending wet corn with low-moisture corn is not an acceptable solution for quality improvement because it generally causes the quality of the entire lot to deteriorate. If high-moisture corn is blended after it has started to go out of condition, molds will continue to grow and will prevent moisture equilibration. Once mold growth has been established, subsequent aeration and partial drying may slow it, but it will resume when the grain is put in a car or an elevator.

Marketing and Processors' Quality Factors

Dry and wet milling are two different ways to process corn for food and industry use. In dry milling, the germ may or may not be removed. If not, the processed product must be turned over rapidly to prevent spoilage from unstable germ oil. Dry milling products are primarily for direct human consumption and are further processed into foods, beverages, or industrial products. Wet milling, which involves considerably greater initial capital outlay, has more end-product marketing options with both industrial input products, such as ethanol, and direct consumption goods such as corn sweeteners.

There is little a dry or wet corn miller can do to improve corn quality once it reaches the plant. Both milling plants require unbroken, sound kernels with a high percentage of horny endosperm. The corn needs to be free from insects, rodent pellets, foreign material, and mold contamination. Lower quality corn forces millers to purchase additional corn to maintain a given level of end-products.

The corn drying temperature at the farm or local elevator poses an unforeseen quality factor for processors. If temperatures exceed

140 degrees Fahrenheit, significant quantities of starch--one of the major end products of wet-milling--will adhere to the fiber and end up in byproducts that sell at a fraction of the price of clean starch. In addition, with centrifuge separation of gluten and starch in the final processing step, heat-damaged gluten will cross-contaminate with starch, causing lower quality starch and gluten.

Another quality factor is kernel impact damage, which may occur from handling techniques. Export contracts for corn are priced by the metric ton with quality factors stated, such as upper limits on moisture, broken and cracked kernels, and foreign material. Terminal elevators at the port draw from different grain silos that contain various grades of corn. The corn is blended to meet contract specifications. With high-speed loading and unloading and gravity drops into storage bins, ships, or river barges, the corn kernels sustain considerable impact damage. This increases broken kernels and fines (pulverized grain), and is thus a loss in kernel volume.

Corn Quality and Use Estimates

"Waste and shrink" is a term for unexplained grain disappearance and is part of the feed and residual use on the corn balance sheet. With lower grain quality, there is an an increase in waste and shrink. Waste is the physical loss of grain from spillage, dust, and any spoilage from mold growth and resultant heating. Shrink refers to the kernel volume loss from grain drying plus kernel shatter with buildup of fines and airborne dust.

The quantity of corn used for some industrial and food products is estimated from reported output of finished products. Average ratios of corn input to final output are used. The ratios use standard corn quality levels. If average quality remains below standard levels for a significant period during a marketing year, estimated corn use will be less than actual use and vice versa. This unmeasured difference is "recovered" as additional feed and residual use. This is one factor that causes a divergence between corn feed and residual use and livestock output or animal numbers.

SRS has accumulated considerable evidence on corn quality at harvest for the 10 major corn producing States. For the past 17 years, SRS has taken objective yield surveys as an additional check on the regular sample surveys used to estimate yields and crop production. Sample fields are selected with probability proportional to planted acreage based on the June Enumerative Survey. From August through November, about 1,900 sample fields are measured for crop development and yield. The measurements include number of ears per acre, weight of grain per acre, and moisture content at harvest.

Since the objective yield surveys began, moisture at harvest has averaged out at 32 percent. This suggests that most corn requires some drying before storage, and that a significant percentage of a reported corn crop may not be ready-to-store grain. Areas with significant dairy and beef production, such as the Lake States, have considerable wet corn stored in vertical and horizontal silos. Such corn is included with other grain corn and may or may not have been adjusted to a 15-percent moisture level. How much grain is stored wet and how much is measured wet, as yields per acre with no volume or weight adjustment, are unknown. Once entered as part of corn production, excess moisture becomes a significant part of disappearance. Such "quantities of corn" disappear during October-December and tend to inflate corn consumption estimates. This has an accounting "domino effect" on feed use estimates for other quarters.

Corn Supply Standard Measures

Not having a standard reporting basis for production and on-farm corn stocks gives rise to the same accounting problem described above for use--estimated stocks and actual stocks based on a quality measure may differ. These stock differences also show up in the feed and residual category.

Stored corn can lose moisture because of forced air circulation and because cold winter air, which tends to be dry, absorbs moisture from the corn. As moisture is lost, corn volume shrinks, and, consequently, corn stocks may not equal reported production put into storage at an earlier date. This shrink continues in on-farm storage until the moisture content in the grain reaches equilibrium with the surrounding atmosphere. The discrepancy shows up when on-farm

stocks are sold and moved. The corn weight moved across the scale will be less than the weight reported as production, if the production report was based on storage volume at harvest. This means that exporters and processors remove more than one bushel from the reported supply for each bushel they report as used. The discrepancy between bushels removed from supply and bushels reported as used is counted as part of feed and residual use. Alternatively, corn that gains moisture subsequent to reported production can cause buyers to remove fewer bushels than initially measured. The discrepancy causes a reduction in implied feed and residual use.

Corn that has a test weight below 56 pounds a bushel creates problems of measurement. Suppose production is reported based on a volume of dry corn, but, because of growing conditions, the corn is light and weighs less than 56 pounds a bushel. The results will be the same as for corn that loses moisture in storage: Corn sold for export or processing will be weighted and divided by 56 pounds to determine the number of bushels sold. However, each of these bushels will represent more than one of the lighter bushels counted as supply. This discrepancy will tend to raise the feed and residual estimate.

Impact of High Moisture Corn Harvest

Total digestible nutrients (TDN) in corn containing 15 percent moisture average approximately 78 percent. 1/ A pound of TDN equals approximately 2,000 kilocalories of digestible energy. However, TDN availability will vary among animal species, based on feeding trial results and corn moisture content. Comparisons of different kinds of livestock and corn moisture levels illustrate the significance of moisture content to nutrient availability per pound of corn consumed by each kind of livestock.

On average, for each point of moisture there is a TDN percentage loss of 0.885 for cattle, 0.78 for hogs, 0.96 for sheep, and 0.915 for horses. If these average differences were applied to allocated corn consumption for the 1982/83 feeding year (92,532 tons), the losses in TDN supplied at 20 percent moisture rather than 13 percent are:

Livestock	Thousand tons	Percent
Cattle	2,482	6
Hogs	1,700	5
Sheep	20	7
Horses	82	6

Had the average moisture content of corn consumed been 20 percent, about 4.3 million additional tons of corn would have been necessary to maintain an assumed 13 percent average moisture content feed value.

Conclusions

Uniform measuring standards for moisture content and test weights for corn supplies could improve estimates of corn feed use. Allowance for an estimated quantity for waste and shrink could then be shown separately on the corn balance sheet. Quantities of corn consumed per animal or unit of animal product would then likely come closer to recorded feed trial ratios. Feed use cannot be measured directly unless very expensive surveys are used. Feed use is not likely to be reported separately from the residual in the foreseeable future. A standard reporting basis for stocks and production would likely reduce the residual, but sampling and reporting errors, other quality factors, and handling losses would still result in some residual.

Moisture levels with respective TDN availabilities

Livestock	Zero moisture	13 percent moisture	20 percent moisture
		Percent	
Cattle	88.8	77.3	71.1
Hogs	77.9	67.8	62.3
Sheep	95.8	83.3	76.6
Horses	91.1	79.3	72.8

1/ $$TDN = \frac{DCP + DCF + DNFE + (DEE \times 2.25) \times 100}{\text{Feed Consumed}}$$

where: DCP = digestible crude protein
DCF = digestible crude fiber
DNFE = digestible nitrogen-free extract
DEE = digestible ether extract (fat)

Table 1.--Feed grains: Marketing year supply, disappearance, area, and prices, 1979-84 1/

Year 2/	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Disappearance: Domestic use: Alc. beverages	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks: Govt. owned	Ending stocks: Privately owned 3/	Ending stocks: Total
	Million metric tons													
1979/80	46.2	237.9	0.3	284.4	15.7	5.2	1.4	138.4	160.7	71.3	232.0	7.7	44.7	52.4
1980/81	52.4	198.0	0.3	250.7	17.1	5.4	1.3	123.0	146.8	69.3	216.1	7.1	27.5	34.6
1981/82	34.6	246.2	0.3	281.1	18.9	5.5	1.4	128.5	154.3	58.6	212.9	8.9	59.3	68.2
1982/83	68.2	250.2	0.3	318.7	20.5	6.0	1.4	139.5	167.4	54.0	221.4	34.2	63.1	97.3
1983/84 4/	97.3	136.0	0.7	234.0	22.9	5.4	1.5	117.1	146.9	55.7	202.6	7.6	23.8	31.4
1984/85*	31.4	231.9 (± 4)	0.5	263.8 (± 4)	-- 31.9 (± 1) --			124.7 (± 10)	156.6 (± 10)	61.3 (± 6)	217.9 (± 15)			45.9 (± 10)

	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested hectare	Index: Average price received by farmers 5/	Government-support program: Total payments to participants
	Million hectares				Metric tons	1977=100	Million dollars
1979/80	44.3	1.9	48.1	41.5	5.74	125	6/ 247
1980/81	42.7	---	49.1	41.1	4.82	154	7/ 412
1981/82	42.5	---	49.9	43.1	5.71	123	8/ 423
1982/83	---	1.3	49.1	42.9	5.83	136	8/ 419
1983/84 4/	---	15.8	41.5	32.4	4.20	154	6/ 1,097
1984/85	---	2.2	48.6	42.3	5.48		9/ 1,620

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year for corn and sorghum begins October 1; for oats and barley, June 1. 3/ Includes total Government loans (original and reseal). 4/ Preliminary. 5/ Excludes support payments. 6/ Deficiency and diversion payments. 7/ Disaster payments. 8/ Deficiency and disaster payments. 9/ Deficiency payments. *The probability is 2 out of 3 that the outcome will be within this range.

Table 2.--Corn: Marketing year supply and disappearance, area, and prices, 1979-84

Year beginning October 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food 1/	Disappearance: Domestic use: Alc. beverages 2/	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks Sept. 30: Govt. owned	Ending stocks Sept. 30: Privately owned 3/	Ending stocks Sept. 30: Total
	Million bushels													
1979/80	1,303.9	7,928.1	1.1	9,233.1	582.8	72.3	20.0	4,508.3	5,183.4	2,432.6	7,616.0	256.3	1,360.8	1,617.1
1980/81	1,617.1	6,639.4	1.2	8,257.7	641.8	73.3	20.2	4,132.9	4,868.2	2,355.2	7,223.4	237.8	796.5	1,034.3
1981/82	1,034.3	8,118.7	1.2	9,154.2	709.4	82.7	19.4	4,201.8	5,013.3	1,966.9	6,980.2	302.4	1,871.6	2,174.0
1982/83	2,174.0	8,235.1	0.9	10,410.0	774.3	109.0	14.5	4,522.3	5,420.1	1,870.0	7,290.1	1,166.3	1,953.6	3,119.9
1983/84 4/	3,119.9	4,166.1	2.5	7,288.5	868.9	86.8	18.9	3,725.7	4,700.3	1,865.9	6,566.2	201.0	521.3	722.3
1984/85*	722.3	7,527.2 (± 195)	1.0	8,250.5 (± 195)	--	1,050.0 (± 30)	--	4,000.5 (± 250)	5,050.5 (± 300)	2,075.0 (± 175)	7,125.5 (± 400)			1,125.0 (± 250)

Year beginning October 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 5/	Average prices: St. Louis No. 2 Yellow	Average prices: Omaha No. 2 Yellow	Average prices: Gulf Ports No. 2 Yellow	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1979/80	85.7	2.9	81.4	72.4	109.5	2.52	2.73	2.49	3.02	2.10	2.20	6/ 126
1980/81	84.1	---	84.0	73.0	91.0	3.11	3.35	3.13	3.54	2.25	2.35	7/ 280
1981/82	80.5	---	84.1	74.5	108.9	2.50	2.61	2.46	2.83	2.40	2.40	7/ 92
1982/83	---	2.1	81.9	72.7	113.2	2.68	2.98	2.82	3.16	2.55	2.70	8/ 292
1983/84	---	32.1	60.2	51.4	81.0	3.20	3.45	3.20	3.63	2.65	2.86	9/ 900
1984/85	---	4.2	79.8	71.1	105.9	2.65-2.95				2.55	3.03	10/ 1,400

1/ Includes industrial products. 2/ Malt beverage and distilled liquor products converted to a corn basis. 3/ Includes quantity under loan and farmer-owned reserve. 4/ Preliminary. 5/ Excludes support payments. 6/ Disaster and diversion payments. 7/ Disaster payments. 8/ Deficiency and disaster payments. 9/ Diversion payments. 10/ Deficiency payments. *The probability is 2 out of 3 that the outcome will be within this range.

Table 3.--Sorghum: Marketing year supply and disappearance, area, and prices, 1979-84

Year beginning October 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Disappearance: Domestic use: Alc. beverages	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks Sept. 30: Govt. owned	Ending stocks Sept. 30: Privately owned 1/	Ending stocks Sept. 30: Total
	Million bushels													
1979/80	159.5	807.4	---	966.9	6.0	4.6	2.0	483.0	495.6	324.9	820.5	43.9	102.5	146.4
1980/81	146.4	579.3	---	725.7	5.0	4.5	2.0	301.3	312.6	304.6	617.2	38.2	70.3	108.5
1981/82	108.5	875.8	---	984.3	4.3	4.8	2.0	427.7	438.8	249.1	687.9	42.9	253.5	296.4
1982/83	296.4	835.1	---	1,131.5	4.2	3.9	.8	507.1	517.0	214.3	731.3	175.6	224.6	400.2
1983/84 2/	400.2	479.2	0.1	879.5	4.2	3.4	2.1	373.4	383.1	246.4	629.5	89.0	161.0	250.0
1984/85*	250.0	813.5 (± 32)	---	1,063.5 (± 32)	- - 10.0 - -			450.5 (± 45)	460.5 (± 45)	250.0 (± 30)	710.5 (± 70)			353.0 (± 50)

Year beginning October 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Average prices: Kansas City No. 2 Yellow	Average prices: Texas No. 2 Yellow	Average prices: Gulf ports No. 2 Yellow	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels		Dollars per cwt.					Mil. dol.
1979/80	15.9	1.2	15.3	12.9	62.6	4.18	4.65	4.97	5.54	3.57	4.18	4/ 99
1980/81	12.8	---	15.6	12.5	46.3	5.25	5.36	5.86	6.16	3.82	4.46	5/ 101
1981/82	14.3	---	15.9	13.7	64.0	4.27	4.29	4.85	4.97	4.07	4.55	6/ 268
1982/83	---	0.7	16.0	14.1	59.1	4.50	4.96	5.30	5.55	4.32	4.64	6/ 67
1983/84 2/	---	5.6	11.7	9.8	48.7	4.91	5.13	5.48	5.65	4.50	4.86	7/ 112
1984/85	---	0.7	16.2	14.2	57.3	4.29-4.55				4.32	5.14	8/ 150

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Excludes support payments. 4/ Deficiency, disaster, and diversion payments. 5/ Disaster payments. 6/ Deficiency and disaster payments. 7/ Diversion payments. 8/ Deficiency payments. *The probability is 2 out of 3 that the outcome will be within this range.

Table 4.--Barley: Marketing year supply and disappearance, area, and prices, 1979-84

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Disappearance: Domestic use: Alc. beverages	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks May 31: Govt. owned	Ending stocks May 31: Privately owned 1/	Ending stocks May 31: Total
	Million bushels													
1979/80	228.0	383.2	11.8	623.0	7.0	150.9	14.0	204.2	376.1	54.8	430.9	3.2	188.9	192.1
1980/81	192.1	361.1	10.2	563.4	7.0	155.3	13.2	173.9	349.4	76.7	426.1	3.4	133.9	137.3
1981/82	137.3	473.5	9.6	620.4	6.9	150.9	16.3	198.4	372.5	100.1	472.6	3.3	144.5	147.8
1982/83	147.8	515.9	10.7	674.4	7.2	145.5	17.4	240.4	410.5	47.2	457.7	6.0	210.7	216.7
1983/84 2/	216.7	508.3	7.1	732.1	7.0	145.0	19.9	279.5	451.4	91.5	542.9	11.9	177.3	189.2
1984/85*	189.2	605.7 (± 22)	10.0	804.9 (± 22)	--	175.0 (± 5)	--	274.9 (± 25)	449.9 (± 25)	100.0 (± 15)	549.9 (± 35)			255.0 (± 35)

Year beginning June 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 3/	Average prices: Minneapolis: No. 2 or better, feed	Average prices: Minneapolis: No. 3 or better, malting	Average prices: Portland: No. 2	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1979/80	7.8	0.7	8.1	7.5	50.9	2.29	2.16	2.87	2.69	1.71	2.40	5/ 22
1980/81	8.7	---	8.3	7.3	49.7	2.86	2.60	3.64	3.34	1.83	2.55	6/ 31
1981/82	10.2	---	9.6	9.0	52.4	2.45	2.21	3.06	2.87	1.95	2.60	5/ 63
1982/83	---	0.4	9.5	9.0	57.2	2.23	1.76	2.53	2.52	2.08	2.60	7/ 60
1983/84 2/	---	1.1	10.4	9.7	52.3	2.50	2.48	2.84	2.91	2.16	2.60	8/ 72
1984/85	---	0.5	12.0	11.2	53.9	2.20-2.40	4/ 2.21	4/ 2.65	4/ 2.66	2.08	2.60	7/ 70

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Excludes support payments. 4/ June-October 1984 average. 5/ Deficiency and disaster payments. 6/ Disaster payments. 7/ Deficiency payments. 8/ Deficiency and diversion payments.
*The probability is 2 out of 3 that the outcome will be within this range.

Table 5.--Oats: Marketing year supply and disappearance, area, and prices, 1979-84

Year beginning June 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Disappearance: Domestic use: Alc. beverages	Disappearance: Domestic use: Seed	Disappearance: Domestic use: Feed and residual	Disappearance: Domestic use: Total	Disappearance: Exports	Disappearance: Total disappearance	Ending stocks May 31: Govt. owned	Ending stocks May 31: Privately owned 1/	Ending stocks May 31: Total
	Million bushels													
1979/80	280.0	526.7	0.9	807.6	40.7	---	34.6	491.8	567.1	4.1	571.2	2.7	233.7	236.4
1980/81	236.4	458.8	1.3	696.5	41.0	---	33.0	432.2	506.2	13.3	519.5	2.3	174.7	177.0
1981/82	177.0	509.5	1.6	688.1	41.2	---	35.4	453.0	529.6	6.6	536.2	0.7	151.2	151.9
1982/83	151.9	592.6	3.9	748.4	41.7	---	43.3	440.6	525.6	3.0	528.6	0.7	219.1	219.8
1983/84 2/	219.8	477.1	30.1	727.0	40.9	---	36.6	466.2	543.7	2.2	545.9	1.5	179.6	181.1
1984/85*	181.1	472.5 (± 19)	20.0	673.6 (± 19)	--	80.0 (± 5)	--	400.6 (± 30)	480.6 (± 30)	3.0	483.6 (± 30)			190.0 (± 25)

Year beginning June 1	Area: National program	Area: Set-aside and diverted 3/	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	Average prices: Minneapolis No. 2 white, heavy	Average prices: Portland No. 2 white, heavy	Average prices: Toledo No. 2	Government-support program: National average loan rate	Government-support program: Target price	Government-support program: Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1979/80	---	---	14.0	9.7	54.4	1.36	1.57	1.87	1.60	1.08	---	---
1980/81	---	---	13.4	8.7	53.0	1.79	2.04	2.42	2.17	1.16	---	---
1981/82	---	---	13.6	9.4	54.2	1.89	2.14	2.36	2.23	1.24	---	---
1982/83	---	0.1	14.0	10.3	57.8	1.48	1.69	2.18	1.55	1.31	1.50	---
1983/84 2/	---	0.3	20.3	9.1	52.6	1.69	1.87	1.95	2.01	1.36	1.60	6/ 13
1984/85	---	0.1	12.2	8.1	58.4	1.60-1.80 5/	1.83 5/	1.94 5/	2.00 5/	1.31	1.60	---

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Not included in the program until 1982. 4/ Excludes support payments. 5/ June-October 1984 average. 6/ Deficiency and diversion payments. *The probability is 2 out of 3 that the outcome will be within this range.

Table 6.--Feed grains: Feed year supply and disappearance, specified periods, 1979-84
(corn, sorghum, oats, barley)

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food	Alc. bever-ages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 1/	Total
	Million metric tons													
1979/80														
Oct.-Dec.	55.5	221.9	0.1	277.5	3.5	1.2	0.1	47.4	52.2	19.2	71.4	3.8	202.3	206.1
Jan.-Mar.	206.1	---	0.1	206.2	3.2	1.3	0.3	39.7	44.5	17.8	62.3	3.8	140.1	143.9
Apr.-May	143.9	---	2/	143.9	2.5	1.0	0.8	20.8	25.1	11.6	36.7	6.7	100.5	107.2
June-Sept.	107.2	14.5	0.1	121.8	6.5	1.9	0.2	29.7	38.3	23.1	61.4	7.7	52.7	60.4
Mkt. year	55.5	236.4	0.3	292.2	15.7	5.4	1.4	137.6	160.1	71.7	231.8	7.7	52.7	60.4
1980/81														
Oct.-Dec.	60.4	183.4	0.1	243.9	3.7	1.2	0.1	45.6	50.6	20.5	71.1	7.7	165.1	172.8
Jan.-Mar.	172.8	---	0.1	172.9	3.2	1.3	0.3	32.0	36.8	18.7	55.5	7.6	109.8	117.4
Apr.-May	117.4	---	2/	117.4	2.8	1.0	0.8	20.8	25.4	11.3	36.7	7.6	73.1	80.7
June-Sept.	80.7	17.7	0.1	98.5	7.5	1.8	0.2	24.8	34.3	18.8	53.1	7.1	38.3	45.4
Mkt. year	60.4	201.1	0.3	261.8	17.2	5.3	1.4	123.2	147.1	69.3	216.4	7.1	38.3	45.4
1981/82														
Oct.-Dec.	45.4	228.5	0.1	274.0	4.1	1.1	0.1	46.4	51.7	16.6	68.3	7.4	198.3	205.7
Jan.-Mar.	205.7	---	0.1	205.8	3.5	1.4	0.3	36.3	41.5	14.8	56.3	7.7	141.8	149.5
Apr.-May	149.5	---	0.1	149.6	3.1	1.0	0.9	19.8	24.8	11.2	36.0	7.9	105.7	113.6
June-Sept.	113.6	19.8	0.1	133.5	8.2	1.9	0.2	25.7	36.0	15.8	51.8	8.9	72.8	81.7
Mkt. year	45.4	248.3	0.4	294.1	18.9	5.4	1.5	128.2	154.0	58.4	212.4	8.9	72.8	81.7
1982/83														
Oct.-Dec	81.7	230.4	0.1	312.2	4.7	1.4	0.1	46.5	52.7	14.9	67.6	12.2	232.4	244.6
Jan.-Mar.	244.6	---	0.1	244.7	3.8	1.5	0.2	40.2	45.7	14.8	60.5	13.6	170.6	184.2
Apr.-May	184.2	---	0.1	184.3	3.3	1.0	0.9	24.4	29.6	8.3	37.9	14.0	132.4	146.4
June-Sept.	146.4	18.0	0.3	164.7	8.8	2.1	0.2	29.5	40.6	16.1	56.7	34.3	73.7	108.0
Mkt. year	81.7	248.4	0.6	330.7	20.6	6.0	1.4	140.6	168.6	54.1	222.7	34.3	73.7	108.0
1983/84														
Oct.-Dec.	108.0	118.0	0.1	226.1	5.3	1.2	0.1	49.1	55.7	15.7	71.4	36.3	118.4	154.7
Jan.-Mar.	154.7	---	0.2	154.9	4.3	1.4	0.2	29.4	35.3	15.5	50.8	35.2	68.9	104.1
Apr.-May	104.1	---	0.1	104.2	4.0	1.0	1.1	18.0	24.1	9.6	33.7	24.6	45.9	70.5
June-Sept.	70.5	20.0	0.2	90.7	9.3	1.9	0.1	20.1	31.4	15.0	46.4	7.6	36.7	44.3
Mkt. year	108.0	138.0	0.6	246.6	22.9	5.5	1.5	116.6	146.5	55.8	202.3	7.6	36.7	44.3

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 metric tons.

Table 7.--Corn: Marketing year supply and disappearance, specified periods, 1979-84

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food 1/	Alc. bev. 2/	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 3/	Total
	Million bushels													
1979/80														
Oct.-Dec.	1,303.9	7,928.1	0.3	9,232.3	128.2	16.3	---	1,544.7	1,689.2	662.9	2,352.1	99.7	6,780.5	6,880.2
Jan.-Mar.	6,880.2	---	0.3	6,880.5	116.6	18.4	4.0	1,305.9	1,444.9	582.0	2,026.9	101.2	4,752.4	4,853.6
Apr.-May	4,853.6	---	0.1	4,853.7	93.2	13.9	12.0	704.7	823.8	385.6	1,209.4	213.5	3,430.8	3,644.3
June-Sept.	3,644.3	---	0.4	3,644.7	244.8	23.7	4.0	953.0	1,225.5	802.1	2,027.6	256.3	1,360.8	1,617.1
Mkt. year	1,303.9	7,928.1	1.1	9,233.1	582.8	72.3	20.0	4,508.3	5,183.4	2,432.6	7,616.0	256.3	1,360.8	1,617.1
1980/81														
Oct.-Dec.	1,617.1	6,639.4	0.2	8,256.7	136.3	16.6	---	1,519.3	1,672.2	727.8	2,400.0	254.3	5,602.4	5,856.7
Jan.-Mar.	5,856.7	---	0.3	5,857.0	116.3	18.3	4.0	1,099.4	1,238.0	632.9	1,870.9	250.0	3,736.1	3,986.1
Apr.-May	3,986.1	---	0.1	3,986.2	106.7	13.8	12.2	684.3	817.0	395.7	1,212.7	251.6	2,521.9	2,773.5
June-Sept.	2,773.5	---	0.6	2,774.1	282.5	24.6	4.0	829.9	1,141.0	598.8	1,739.8	237.8	796.5	1,034.3
Mkt. year	1,617.1	6,639.4	1.2	8,257.7	641.8	73.3	20.2	4,132.9	4,868.2	2,355.2	7,223.4	237.8	796.5	1,034.3
1981/82														
Oct.-Dec.	1,034.3	8,118.7	0.4	9,153.4	153.2	16.8	---	1,517.2	1,687.2	545.5	2,232.7	247.6	6,673.1	6,920.7
Jan.-Mar.	6,920.7	---	0.3	6,921.0	128.4	20.2	3.9	1,180.9	1,333.4	489.4	1,822.8	261.7	4,836.5	5,098.2
Apr.-May	5,098.2	---	0.1	5,098.3	119.4	15.2	12.1	662.5	809.2	409.0	1,218.2	269.7	3,610.4	3,880.1
June-Sept.	3,880.1	---	0.4	3,880.5	308.4	30.5	3.4	841.2	1,183.5	523.0	1,706.5	302.4	1,871.6	2,174.0
Mkt. year	1,034.3	8,118.7	1.2	9,154.2	709.4	82.7	19.4	4,201.8	5,013.3	1,966.9	6,980.2	302.4	1,871.6	2,174.0
1982/83														
Oct.-Dec.	2,174.0	8,235.1	0.3	10,409.4	175.2	27.9	---	1,488.9	1,692.0	512.7	2,204.7	429.0	7,775.7	8,204.7
Jan.-Mar.	8,204.7	---	0.2	8,204.9	140.0	28.0	1.3	1,329.7	1,499.0	507.9	2,006.9	483.4	5,714.6	6,198.0
Apr.-May	6,198.0	---	0.1	6,198.1	125.0	17.6	10.3	812.8	965.7	308.5	1,274.2	491.7	4,432.2	4,923.9
June-Sept.	4,923.9	---	0.3	4,924.2	334.1	35.5	2.9	890.9	1,263.4	540.9	1,804.3	1,166.3	1,953.6	3,119.9
Mkt. year	2,174.0	8,235.1	0.9	10,410.0	774.3	109.0	14.5	4,522.3	5,420.1	1,870.0	7,290.1	1,166.3	1,953.6	3,119.9
1983/84														
Oct.-Dec.	3,119.9	4,166.1	0.3	7,286.3	200.3	19.3	---	1,630.4	1,850.0	528.9	2,378.9	1,229.7	3,677.7	4,907.4
Jan.-Mar.	4,907.4	---	0.8	4,908.2	160.0	22.4	1.1	967.4	1,150.9	510.0	1,660.9	1,198.2	2,049.1	3,247.3
Apr.-May	3,247.3	---	0.7	3,248.0	155.0	16.5	15.5	578.7	765.7	339.7	1,105.4	818.6	1,324.0	2,142.6
June-Sept.	2,142.6	---	0.7	2,143.3	353.6	28.6	2.3	549.2	933.7	487.3	1,421.0	201.0	521.3	722.3
Mkt. year	3,119.9	4,166.1	2.5	7,288.5	868.9	86.8	18.9	3,725.7	4,700.3	1,865.9	6,566.2	201.0	521.3	722.3

1/ Includes industrial products. 2/ Malt beverage and distilled liquor grain products converted to a corn basis. 3/ Includes quantity under loan and farmer-owned reserve.

Table 8.--Sorghum: Marketing year supply and disappearance, specified periods, 1979-84

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1979/80														
Oct.-Dec.	159.5	807.4	---	966.9	1.6	1.3	---	242.8	245.7	74.2	319.9	45.3	601.7	647.0
Jan.-Mar.	647.0	---	---	647.0	1.6	1.2	0.2	139.8	142.8	108.5	251.3	45.6	350.1	395.7
Apr.-May	395.7	---	---	395.7	1.4	0.7	1.2	54.5	57.8	60.3	118.1	45.6	232.0	277.6
June-Sept.	277.6	---	2/	277.6	1.4	1.4	0.6	45.9	49.3	81.9	131.2	43.9	102.5	146.4
Mkt. year	159.5	807.4	2/	966.9	6.0	4.6	2.0	483.0	495.6	324.9	820.5	43.9	102.5	146.4
1980/81														
Oct.-Dec.	146.4	579.3	2/	725.7	1.6	1.2	---	192.1	194.9	66.2	261.1	43.7	420.9	464.6
Jan.-Mar.	464.6	---	2/	464.6	1.6	0.9	0.2	63.9	66.6	84.1	150.7	43.5	270.4	313.9
Apr.-May	313.9	---	2/	313.9	0.8	0.7	1.2	85.0	87.7	41.7	129.4	43.8	140.7	184.5
June-Sept.	184.5	---	2/	184.5	1.0	1.5	0.6	-39.7	-36.6	112.6	76.0	38.2	70.3	108.5
Mkt. year	146.4	579.3	2/	725.7	5.0	4.3	2.0	301.3	312.6	304.6	617.2	38.2	70.3	108.5
1981/82														
Oct.-Dec.	108.5	875.8	2/	984.3	1.3	1.3	---	215.9	218.5	77.8	296.3	38.4	649.6	688.0
Jan.-Mar.	688.0	---	2/	688.0	1.3	1.3	0.2	149.4	152.2	74.3	226.5	38.2	423.3	461.5
Apr.-May	461.5	---	2/	461.5	0.5	0.8	1.2	57.7	60.2	21.8	82.0	38.3	341.2	379.5
June-Sept.	379.5	---	2/	379.5	1.2	1.4	0.6	4.7	7.9	75.2	83.1	42.9	253.5	296.4
Mkt. year	108.5	875.8	2/	984.3	4.3	4.8	2.0	427.7	438.8	249.1	687.9	42.9	253.5	296.4
1982/83														
Oct.-Dec	296.4	835.1	2/	1,131.5	1.4	1.0	---	251.6	254.0	67.0	321.0	46.7	763.8	810.5
Jan.-Mar.	810.5	---	2/	810.5	1.2	1.0	0.1	124.5	126.8	62.5	189.3	47.8	573.4	621.2
Apr.-May	621.2	---	---	621.2	0.4	0.6	0.8	76.2	78.0	14.1	92.1	54.0	475.1	529.1
June-Sept.	529.1	---	2/	529.1	1.2	1.3	0.9	54.8	58.2	70.7	128.9	175.6	224.6	400.2
Mkt. year	296.4	835.1	2/	1,131.5	4.2	3.9	1.8	507.1	517.0	214.3	731.3	175.6	224.6	400.2
1983/84														
Oct.-Dec.	400.2	479.2	---	879.4	1.3	1.0	---	164.5	166.8	62.1	228.9	189.3	461.2	650.5
Jan.-Mar.	650.5	---	---	650.5	1.3	0.7	0.2	103.4	105.6	77.8	183.4	175.3	291.8	467.1
Apr.-May	467.1	---	---	467.1	0.3	0.4	0.8	68.8	70.3	29.5	99.8	137.4	229.9	367.3
June-Sept.	367.3	---	0.1	367.4	1.3	1.3	1.1	36.7	40.4	77.0	117.4	89.0	161.0	250.0
Mkt. year	400.2	479.2	0.1	879.5	4.2	3.4	2.1	373.4	383.1	246.4	629.5	89.0	161.0	250.0

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 bushels.

Table 9.—Barley: Marketing year supply and disappearance, specified periods, 1980-84

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1980/81														
June-Sept.	192.1	361.1	3.5	556.7	2.5	56.6	1.2	78.8	139.1	24.9	164.0	3.5	389.2	392.7
Oct.-Dec.	392.7	---	2.3	395.0	1.7	33.9	2.2	32.2	70.0	21.4	91.4	3.5	300.1	303.6
Jan.-Mar.	303.6	---	2.7	306.3	1.7	36.0	3.7	38.7	80.1	22.7	102.8	3.4	200.1	203.5
Apr.-May	203.5	---	1.7	205.2	1.1	28.8	6.1	24.2	60.2	7.7	67.9	3.4	133.9	137.3
Mkt. year	192.1	361.1	10.2	563.4	7.0	155.3	13.2	173.9	349.4	76.7	426.1	3.4	133.9	137.3
1981/82														
June-Sept.	137.3	473.5	2.4	613.2	2.5	54.5	1.3	75.6	133.9	32.6	166.5	3.3	443.4	446.7
Oct.-Dec.	446.7	---	2.4	449.1	1.7	32.1	2.3	50.7	86.8	33.0	119.8	3.3	326.0	329.3
Jan.-Mar.	329.3	---	2.7	332.0	1.7	37.2	4.0	41.7	84.6	23.1	107.7	3.3	221.0	224.3
Apr.-May	224.3	---	2.1	226.4	1.0	27.1	8.7	30.4	67.2	11.4	78.6	3.3	144.5	147.8
Mkt. year	137.3	473.5	9.6	620.4	6.9	150.9	16.3	198.4	372.5	100.1	472.6	3.3	144.5	147.8
1982/83														
June-Sept.	147.8	515.9	5.1	668.8	2.5	51.3	1.3	92.2	147.3	25.4	172.7	3.9	492.2	496.1
Oct.-Dec.	496.1	---	1.9	498.0	1.8	32.1	2.8	40.7	77.4	6.5	83.9	4.8	409.3	414.1
Jan.-Mar.	414.1	---	2.2	416.3	1.8	35.5	3.9	68.5	109.7	12.7	122.4	5.8	288.1	293.9
Apr.-May	293.9	---	1.5	295.4	1.1	26.6	9.4	39.0	76.1	2.6	78.7	6.0	210.7	216.7
Mkt. year	147.8	515.9	10.7	674.4	7.2	145.5	17.4	240.4	410.5	47.2	457.7	6.0	210.7	216.7
1983/84														
June-Sept.	216.7	508.3	3.4	728.4	2.5	53.8	1.2	132.0	189.5	23.4	212.9	9.3	506.2	515.5
Oct.-Dec.	515.5	---	1.5	517.0	1.7	29.8	2.4	83.2	117.1	32.9	150.0	11.4	355.6	367.0
Jan.-Mar.	367.0	---	1.2	368.2	1.7	35.2	3.9	33.9	74.7	25.1	99.8	12.0	256.4	268.4
Apr.-May	268.4	---	1.0	269.4	1.1	26.2	12.4	30.4	70.1	10.1	80.2	11.9	177.3	189.2
Mkt. year	216.7	508.3	7.1	732.1	7.0	145.0	19.9	279.5	451.4	91.5	542.9	11.9	177.3	189.2
1984/85														
June-Sept.	189.2	605.7	3.6	798.5	2.5	52.7	1.2	128.9	185.3	29.7	215.0	10.0	573.5	583.5
Oct.-Dec.														
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve.

Table 10.--Oats: Marketing year supply and disappearance, specified periods, 1980-84

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 1/	Total
	Million bushels													
1980/81														
June-Sept.	236.4	458.8	0.6	695.8	15.0	---	1.8	190.4	207.2	3.9	211.1	2.7	482.0	484.7
Oct.-Dec.	484.7	---	0.2	484.9	10.0	---	1.8	79.2	91.0	2.8	93.8	2.7	388.4	391.1
Jan.-Mar.	391.1	---	0.3	391.4	10.0	---	7.0	115.6	132.6	2.6	135.2	2.5	253.7	256.2
Apr.-May	256.2	---	0.2	256.4	6.0	---	22.4	47.0	75.4	4.0	79.4	2.3	174.7	177.0
Mkt. year	236.4	458.8	1.3	696.5	41.0	---	33.0	432.2	506.2	13.3	519.5	2.3	174.7	177.0
1981/82														
June-Sept.	177.0	509.5	0.3	686.8	16.0	---	2.0	207.2	225.2	3.2	228.4	1.7	456.7	458.4
Oct.-Dec.	458.4	---	0.2	458.6	10.0	---	2.0	80.2	92.2	1.2	93.4	1.7	363.5	365.2
Jan.-Mar.	365.2	---	0.2	365.4	10.0	---	7.3	111.4	128.7	1.2	129.9	1.7	233.8	235.5
Apr.-May	235.5	---	0.9	236.4	5.2	---	24.1	54.2	83.5	1.0	84.5	0.7	151.2	151.9
Mkt. year	177.0	509.5	1.6	688.1	41.2	---	35.4	453.0	529.6	6.6	536.2	0.7	151.2	151.9
1982/83														
June-Sept.	151.9	592.6	0.8	745.3	16.2	---	2.0	167.7	185.9	1.3	187.2	0.6	557.5	558.1
Oct.-Dec.	558.1	---	0.2	558.3	10.0	---	2.0	92.0	104.0	1.0	105.0	0.7	452.6	453.3
Jan.-Mar.	453.3	---	1.6	454.9	10.7	---	7.6	117.3	135.6	0.3	135.9	0.7	318.3	319.0
Apr.-May	319.0	---	1.3	320.3	4.8	---	31.7	63.6	100.1	0.4	100.5	0.7	219.1	219.8
Mkt. year	151.9	592.6	3.9	748.4	41.7	---	43.3	440.6	525.6	3.0	528.6	0.7	219.1	219.8
1983/84														
June-Sept.	219.8	477.1	11.7	708.6	15.8	---	1.9	184.9	202.6	0.8	203.4	1.1	504.1	505.2
Oct.-Dec.	505.2	---	4.9	510.1	9.9	---	1.9	118.7	130.5	0.7	131.2	1.4	377.5	378.9
Jan.-Mar.	378.9	---	10.6	389.5	10.5	---	7.4	101.2	119.1	0.3	119.4	1.5	268.6	270.1
Apr.-May	270.1	---	2.9	273.0	4.7	---	25.4	61.4	91.5	0.4	91.9	1.5	179.6	181.1
Mkt. year	219.8	477.1	30.1	727.0	40.9	---	36.6	466.2	543.7	2.2	545.9	1.5	179.6	181.1
1984/85														
June-Sept.	181.1	472.5	5.8	659.4	15.7	---	1.9	167.0	184.6	0.6	185.2	1.0	473.2	474.2
Oct.-Dec.														
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve.

Table 11.--Average prices received by farmers, United States, by months, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
						Dollars per bushel							
Corn													
1979	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	3.01	2.52
1980	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	2.55	3.11
1981	2.45	2.34	2.39	2.54	2.44	2.46	2.55	2.60	2.57	2.50	2.30	2.15	2.50
1982	1.98	2.13	2.26	2.36	2.56	2.71	2.95	3.03	3.04	3.13	3.35	3.32	2.68
1983	3.15	3.17	3.15	3.15	3.11	3.21	3.32	3.34	3.37	3.30	3.12	2.90	3.20
1984	*2.72												
						Dollars per cwt							
Sorghum													
1979	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	5.12	4.18
1980	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	4.07	5.25
1981	3.90	3.87	3.95	4.09	4.08	4.00	4.10	4.35	4.17	3.96	3.95	3.80	4.27
1982	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.05	5.03	5.29	5.26	4.50
1983	5.01	4.98	4.93	4.93	4.74	4.85	5.00	5.08	4.95	4.69	4.55	4.24	4.91
1984	*4.11												

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average weighted by sales 1/
						Dollars per bushel							
Oats													
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79
1981	1.99	1.84	1.72	1.74	1.78	1.88	1.94	1.97	1.99	2.02	1.99	1.99	1.89
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.46	1.48	1.48	1.54	1.54	1.48
1983	1.51	1.46	1.45	1.55	1.62	1.67	1.73	1.81	1.88	1.82	1.82	1.84	1.69
1984	1.80	1.71	1.67	1.67	*1.62								
Barley													
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.86
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	2.50	2.40	2.40	2.42	2.53	2.45
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.09	2.22	2.37	2.23
1983	2.32	2.20	2.34	2.46	2.53	2.55	2.55	2.55	2.47	2.50	2.55	2.78	2.50
1984	2.63	2.54	2.26	2.23	*2.24								

Item and year beginning May 1	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales
						Dollars per ton							
Hay (mid-month)													
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.50
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.20	71.00
1981	75.30	66.90	64.00	63.90	62.70	64.80	65.40	65.70	67.90	69.90	69.50	73.30	67.10
1982	77.50	69.60	66.10	65.00	66.80	67.10	68.70	68.60	70.50	73.50	70.10	74.20	68.80
1983	83.90	75.30	72.70	72.60	75.40	78.50	76.60	77.90	80.00	81.20	80.50	82.50	76.20
1984	84.90	78.70	71.80	71.70	71.90	71.60							

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes Government payments. *Preliminary.
Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 12.--Cash prices at principal markets, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
						Dollars per bushel							
CORN No. 2 Yellow, St. Louis													
1979	2.59	2.51	2.66	2.50	2.64	2.54	2.53	2.60	2.66	3.01	3.31	3.26	2.73
1980	3.35	3.53	3.59	3.60	3.47	3.42	3.49	3.42	3.33	3.34	3.03	2.61	3.35
1981	2.53	2.59	2.54	2.65	2.61	2.66	2.78	2.78	2.75	2.68	2.42	2.32	2.61
1982	2.12	2.43	2.49	2.52	2.79	2.99	3.24	3.24	3.27	3.39	3.68	3.60	2.98
1983	3.50	3.53	3.45	3.41	3.31	3.55	3.61	3.58	3.57	3.43	3.33	3.09	3.45
1984	2.84												
CORN No. 2 Yellow, Omaha													
1979	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	3.01	2.49
1980	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	2.51	3.13
1981	2.44	2.39	2.37	2.47	2.45	2.48	2.61	2.65	2.65	2.54	2.23	2.23	2.46
1982	2.12	2.35	2.37	2.42	2.62	2.82	3.09	3.10	3.11	3.18	3.39	3.32	2.82
1983	3.23	3.24	3.17	3.11	3.03	3.25	3.33	3.35	3.37	3.22	3.11	2.94	3.20
1984	2.71												
SORGHUM No. 2 Yellow, Kansas City						Dollars per cwt							
1979	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	5.61	4.65
1980	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	4.16	5.36
1981	4.14	4.14	4.27	4.44	4.26	4.28	4.45	4.48	4.50	4.38	4.02	4.06	4.29
1982	3.85	4.25	4.37	4.54	4.87	5.08	5.30	5.37	5.37	5.32	5.69	5.55	4.96
1983	5.37	5.25	5.16	5.09	5.03	5.40	5.36	5.39	5.40	4.95	4.74	4.46	5.13
1984	4.25												

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
OATS No. 2 Heavy, Minneapolis													
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	2.23	2.26	2.16	2.21	2.16	2.14
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	1.67	1.63	1.63	1.73	1.71	1.69
1983	1.67	1.60	1.79	1.94	2.00	1.97	1.94	1.98	1.82	1.87	1.89	1.96	1.87
1984	1.92	1.84	1.77	1.79	1.84								
BARLEY No. 2 or Better Feed, Minneapolis													
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	2.20	2.27	2.16	2.16	2.24	2.21
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	1.63	1.72	1.73	2.01	1.95	1.76
1983	1.96	1.95	2.42	2.61	2.60	2.53	2.39	2.55	2.56	2.65	2.74	2.77	2.48
1984	2.59	2.18	2.13	2.05	2.10								
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	3.00	3.14	2.99	2.98	3.05	3.06
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	2.38	2.42	2.45	2.68	2.76	2.53
1983	2.60	2.54	2.76	2.90	2.96	2.95	2.77	2.85	2.76	2.91	3.04	3.06	2.84
1984	3.04	2.86	2.48	2.44	2.43								

Source: Grain and Feed Market News, AMS, USDA.

Table 13.--Feed-price ratios for livestock, poultry, and milk, by months, 1979-84

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
HOG/CORN, U.S. basis 1/													
1979	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	15.3	14.3
1980	15.8	14.7	13.7	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	19.1	14.4
1981	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.1	26.6	28.5	21.0
1982	28.2	24.6	23.7	23.4	21.9	18.6	15.9	15.1	14.4	13.9	13.9	13.3	18.9
1983	12.8	11.8	14.0	15.3	14.6	14.3	14.1	14.2	14.5	15.8	16.2	16.0	14.5
1984 2/	15.9												
BEEF-STEER/CORN, Omaha 3/													
1979	27.8	28.9	29.1	29.4	29.0	30.0	27.2	26.6	26.6	25.1	24.3	23.1	27.3
1980	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	26.0	21.0
1981	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	27.5	26.3
1982	27.7	25.1	25.2	24.5	23.4	22.7	21.9	21.8	21.2	19.6	18.1	17.8	22.4
1983	18.4	18.3	19.8	21.6	22.1	21.1	20.4	19.7	19.1	20.4	20.7	21.3	20.3
1984 2/	22.4												
MILK/FEED, U.S. basis 4/													
1979	1.55	1.59	1.54	1.54	1.56	1.56	1.55	1.53	1.50	1.48	1.42	1.40	1.52
1980	1.43	1.40	1.39	1.39	1.39	1.41	1.39	1.35	1.36	1.40	1.43	1.48	1.40
1981	1.53	1.56	1.54	1.55	1.53	1.53	1.51	1.46	1.47	1.47	1.50	1.57	1.52
1982	1.61	1.62	1.60	1.59	1.56	1.55	1.49	1.45	1.43	1.45	1.41	1.36	1.51
1983	1.39	1.36	1.34	1.33	1.33	1.33	1.32	1.32	1.31	1.34	1.39	1.48	1.35
1984 2/	1.55												
EGG/FEED, U.S. basis 5/													
1979	6.1	6.8	7.3	6.6	6.0	6.4	6.0	5.4	5.6	5.7	6.0	6.2	6.1
1980	5.7	6.0	6.6	5.9	5.7	5.6	5.9	5.2	5.2	5.5	5.8	6.4	5.8
1981	6.5	7.2	6.7	6.6	6.8	7.1	6.6	5.6	5.3	5.7	5.4	6.0	6.3
1982	6.3	6.3	6.0	5.7	5.8	6.1	5.8	6.0	5.8	5.7	6.1	6.0	6.0
1983	6.2	6.9	7.6	8.8	8.6	7.4	8.5	6.4	5.8	5.7	5.8	5.9	7.0
1984 2/	5.7												
BROILER/FEED, U.S. basis 6/													
1979	2.2	2.6	2.7	2.8	2.6	2.5	2.3	2.6	2.6	3.3	3.0	2.9	2.7
1980	2.8	2.5	2.5	2.6	2.6	2.6	2.3	2.4	2.6	2.6	2.5	2.4	2.5
1981	2.4	2.4	2.3	2.6	2.6	2.6	2.5	2.6	2.7	2.6	2.5	2.6	2.5
1982	2.5	2.5	2.5	2.6	2.7	2.4	2.3	2.4	2.6	2.8	2.8	2.7	2.6
1983	2.5	2.8	2.8	3.0	3.1	3.1	2.8	2.7	2.7	3.0	2.7	2.9	2.8
1984 2/	2.7												
TURKEY/FEED, U.S. basis 7/													
1979	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.5	3.5	3.7	3.7
1980	4.0	3.9	3.5	3.1	3.1	3.2	3.0	3.0	3.3	3.3	3.2	3.1	3.3
1981	2.8	3.1	2.9	3.0	3.0	3.0	3.0	2.9	3.2	3.4	3.5	3.8	3.1
1982	3.9	3.9	3.0	2.9	2.9	2.9	2.7	2.9	3.0	2.8	2.8	3.0	3.0
1983	3.0	3.1	3.5	3.6	3.2	3.3	3.4	3.3	3.3	3.6	3.8	3.9	3.4
1984 2/	4.4												

1/ Bushels of corn equal in value to 100 pounds of hog, live weight.
2/ Preliminary.
3/ Based on price of choice beef-steers, 900-1,100 pounds.
4/ Pounds of 16 percent mixed dairy feed equal in value to 1 pound whole milk.
5/ Pounds of laying feed equal in value to 1 dozen eggs.
6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight.
7/ Pounds of turkey grower feed equal in value to 1 pound turkey, live weight.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 14.--Price trends, selected feeds, and corn products

Item	Unit	Oct.-Sept. 1983/84 1/	1984 June	July	Aug.	Sept.	Oct.
WHOLESALE, MOSTLY BULK 2/							
Soybean meal, 44% solvent, Decatur	$/ton	188	174	158	152	145	142
Soybean meal, high protein, Decatur	"	203	191	173	165	160	157
Cottonseed meal, 41% solvent, Memphis	"	192	178	169	169	152	115
Linseed meal, 34% solvent, Minneapolis	"	140	129	116	111	89	93
Peanut meal, Southeast mills	"	209	210	---	154	152	143
Meat meal, Ill. prod. pts.	"	205	195	175	167	163	179
Fishmeal, 65% protein, East Coast	"	368	354	329	299	292	295
Gluten feed, Chicago	"	109	84	80	79	69	76
Gluten meal, 60% protein, Chicago	"	260	266	237	219	214	211
Brewers' dried grains, Milwaukee	"	113	102	88	80	84	77
Distillers' dried grain, Lawrenceburg, Ky.	"	170	166	157	148	139	120
Feather meal, Arkansas Pts.	"	246	205	184	184	180	177
Wheat bran, Kansas City	"	95	75	78	84	84	81
Wheat middlings, Kansas City	"	95	75	78	84	84	81
Rice bran, f.o.b. mills, Arkansas	"	82	64	66	68	57	54
Hominy feed, Ill. pts.	"	108	103	97	98	102	89
Alfalfa meal, dehy., Kansas City	"	129	117	110	109	112	114
Cane molasses, New Orleans	"	67	69	59	50	50	50
Molasses beet pulp, Los Angeles	"	124	121	125	124	118	120
Animal fat, Ill. prod. pts.	c/lb.	17.4	20.5	17.6	17.2	18.3	18.6
Urea, 42% N., Fort Worth	$/ton	214	204	204	220	222	219
Corn, No. 2 white, Kansas City	$/bu.	4.70	4.50	4.56	4.25	4.11	4.02
PRICES PAID, U.S. BASIS 3/							
Soybean meal, 44%	$/cwt.	14.36	13.60	13.00	12.60	12.30	11.80
Cottonseed meal, 41%	"	15.68	15.40	15.20	15.00	14.90	14.20
Wheat bran	"	10.42	10.40	10.20	10.20	10.20	10.00
Wheat middlings	"	9.93	9.83	9.52	9.56	9.50	9.46
Broiler grower feed	$/ton	238	243	233	225	221	221
Laying feed	"	213	212	209	202	198	194
Turkey grower feed	"	254	254	246	238	239	232
Chick starter	"	238	229	235	223	224	220
Dairy feed, 16%	"	197	195	192	188	187	179
Beef cattle concentrate, 32-36% protein	$/cwt.	12.92	12.60	12.40	12.10	12.00	11.50
Hog concentrate, 38-42% protein	"	15.75	15.30	14.50	14.20	13.80	13.50
Stock salt	"	6.35	6.29	6.28	6.27	6.25	6.24
CORN PRODUCTS, WHOLESALE 4/							
Corn meal, New York White	$/cwt.	19.89	19.22	18.36	18.91	19.74	14.55
Yellow	"	14.31	14.91	14.73	14.62	14.35	12.06
Grits (brewers'), Chicago	"	11.36	11.92	11.74	11.63	11.36	10.36
Syrup, Chicago West	c/lb.	13.35	13.69	14.06	13.94	13.44	13.35
Sugar (dextrose), Chicago West	"	24.22	24.25	24.25	24.25	24.25	24.25
High-fructose (dried weight in tank cars), Chicago West	"	20.06	19.79	21.48	21.48	20.07	20.07
Corn starch, f.o.b. Midwest	$/cwt.	13.51	14.30	14.69	14.96	14.84	14.55

1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, ERS, USDA. 4/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 15.--Hay (all): acreage, supply, and disappearance, 1979-84

Item	Unit	1979/80	1980/81	1981/82	1982/83	1983/84 1/	1984/85 2/
Acreage harvested	Mil. acres	61.3	58.9	59.6	59.8	59.7	62.3
Yield per acre	Tons	2.40	2.22	2.39	2.50	2.36	2.47
Carryover (May 1)	Mil. short tons	30.1	33.2	25.4	25.0	28.1	20.6
Production	"	147.3	130.7	142.5	149.2	140.7	154.1
Supply	"	177.4	163.9	167.9	174.2	168.8	174.7
Disappearance	"	144.2	138.5	142.9	146.1	148.2	NA
Roughage-consuming animal units (RCAU)	Mil. units	87.5	89.9	91.8	90.4	90.6	89.4
Supply per RCAU	Tons	2.03	1.82	1.83	1.93	1.86	1.95
Disappearance per RCAU	"	1.65	1.54	1.56	1.62	1.64	NA

1/ October 1984 crop indications. 2/ Forecast. NA = Not available.

Table 16.--Annual hay production, pasture-range index (October 1), and prices received by farmers, 1979-84

Year	North-east	Lake States	Corn Belt	Northern Plains	Appa-lachian	South-east	Delta States	Southern Plains	Mountain	Pacific	United States 1/
						Thousand tons					
1979											
Hay production	12,733	25,077	24,465	26,296	8,308	3,429	3,877	11,201	19,564	12,357	147,307
Pasture-range index	87	82	81	75	94	86	85	78	74	80	82
1980											
Hay production	12,672	23,378	21,861	18,882	7,929	2,806	2,828	7,830	19,234	13,320	130,740
Pasture-range index	64	88	77	55	48	54	40	43	76	89	63
1981											
Hay production	12,682	23,025	24,118	23,023	8,490	3,139	3,750	10,470	20,527	13,296	142,520
Pasture-range index	83	86	86	77	82	67	76	82	78	80	80
1982											
Hay production	13,150	25,364	23,674	26,391	8,845	3,631	3,950	10,224	20,767	13,245	149,241
Pasture-range index	77	85	86	85	82	79	80	62	92	83	81
1983											
Hay production	12,901	24,986	19,229	24,595	7,644	3,116	3,524	11,202	20,429	13,108	140,734
Pasture-range index	67	79	47	69	48	67	62	58	86	93	67
1984											
Hay production	14,433	28,259	24,967	25,520	9,477	3,968	3,708	9,247	20,320	14,152	154,051
Pasture-range index	77	75	69	64	69	62	70	43	86	84	70

Mid-October prices	Penn-sylvania	Wis-consin	Iowa	Kansas	Kentucky	Arkansas	Texas	Colorado	Cali-fornia	United States
						Dollars per ton				
1979	48.00	30.50	45.00	46.50	51.50	43.00	53.00	52.50	86.00	60.80
1980	66.00	40.00	56.00	56.00	59.50	52.50	74.00	58.50	99.00	77.20
1981	93.00	62.00	52.00	57.00	62.00	44.00	58.00	65.00	70.00	64.80
1982	81.00	63.00	51.00	56.00	66.00	50.00	69.00	61.00	82.00	67.10
1983	93.00	69.00	72.00	77.00	87.00	69.00	77.00	69.00	96.00	78.50
1984	93.00	62.00	57.00	80.00	80.00	61.00	91.00	72.00	75.00	71.60

1/ U.S. price weighted by regional production.

Source: Crop Reporting Board, USDA.

Table 17.--High-protein feed: quantity fed and high-protein animal units, 1977-84 1/

Year beginning October	Quantity fed (in 44% protein soybean meal equivalent)				High-protein animal units	Fed per animal unit
	Oilseed meal	Animal protein	Grain protein	Total		
	- - - 1,000 metric tons - - -				Million	Pounds
1977	17,259	3,042	982	21,283	104.5	449
1978	18,472	3,050	1,028	22,550	108.0	460
1979	20,152	3,210	689	24,051	114.6	463
1980	18,116	3,661	1,028	22,805	113.5	443
1981	18,974	3,701	1,003	23,678	110.2	474
1982	19,690	2,564	1,035	23,289	109.0	471
1983 2/	17,776	2,331	1,400	21,507	109.4	433
1984 3/	18,932	2,304	1,193	22,429	106.1	466

1/ Excludes urea and other nitrogenous compounds. 2/ Preliminary. 3/ Forecast.

Table 18.--Processed feeds: quantity fed, 1977-84 1/

Feed	Year beginning October							
	1977	1978	1979	1980	1981	1982	1983 2/	1984 3/
	- - - 1,000 metric tons - - -							
HIGH PROTEIN								
Oilseed meal								
Soybean 4/	14,766	15,758	17,113	15,667	15,777	17,011	15,453	16,165
Cottonseed	1,780	1,534	1,641	1,428	1,779	1,439	1,082	1,416
Linseed	79	122	146	117	100	70	70	100
Peanut	92	93	108	85	114	80	80	
Sunflower	---	180	359	40	430	302	300	373
Total	16,717	17,687	19,367	17,337	18,200	18,902	16,985	18,054
Animal proteins								
Tankage and meat meal	2,112	2,107	2,356	2,229	2,261	2,254	2,265	1,400
Fishmeal and solubles	379	462	371	344	480	410	365	225
Commercial dried milk products	178	144	144	146	150	149	150	100
Noncommercial milk products	177	140	132	137	130	131	130	80
Total	2,846	2,853	3,003	2,856	3,021	2,944	2,910	1,805
Grain protein feeds								
Gluten feed and meal	1,109	1,083	716	763	941	1,083	1,358	1,050
Brewers' dried grains	256	280	307	290	239	275	263	270
Distillers' dried grains	366	449	449	453	448	602	499	500
Total	1,731	1,812	1,472	1,506	1,628	1,960	2,120	1,820
OTHER								
Wheat millfeeds	4,508	4,484	4,400	4,638	4,578	5,058	5,109	4,350
Rice millfeeds	501	574	633	706	667	624	600	615
Dried and molasses beet pulp	1,316	1,361	1,485	1,165	1,365	1,278	1,147	1,200
Alfalfa meal	1,358	1,243	1,143	994	898	841	750	900
Fats and oils	667	630	635	630	544	509	522	530
Molasses, inedible	3,250	3,100	2,812	3,251	2,540	2,378	2,300	2,400
Miscellaneous byproduct feeds 5/	998	1,000	907	1,000	1,425	1,334	1,517	1,500
Total	12,598	12,392	12,015	12,384	12,017	12,022	11,945	11,495
Grain total	33,892	34,744	35,599	34,083	34,728	35,828	33,960	33,174

1/ Adjusted for stocks, production, foreign trade, and nonfeed uses where applicable. 2/ Preliminary. 3/ Forecast. 4/ Includes use in edible soy products and shipments to U.S. territories. 5/ Allowance for hominy feed, oat millfeeds, and screenings.

Table 19.--Consumption of feed by kind of livestock, 1977-84

Year beginning October 1	Concentrates							Roughages	
	Feed grains 1/	All grains 2/	High protein 3/	Other feed 4/	Total concentrates	Corn	Soybean meal 5/	Hay	Other harvested roughage 6/
	Million metric tons								
Dairy animals									
1977	21.2	21.9	2.2	4.3	28.6	16.3	1.4	38.2	58.9
1978	22.8	23.3	2.2	4.3	29.8	18.7	1.3	42.6	59.2
1979	22.9	25.6	2.2	1.3	29.1	18.7	1.4	40.2	58.2
1980	21.9	22.1	1.9	4.4	28.4	16.8	1.5	37.6	46.3
1981	22.7	23.2	2.5	3.9	30.1	18.9	1.5	46.2	53.9
1982	24.6	25.3	2.5	4.4	32.2	19.8	1.6	48.7	40.9
1983	23.0	24.5	2.3	4.3	31.1	17.8	1.5	48.4	36.5
1984 7/	23.5	23.9	2.7	4.4	31.0	18.9	1.7	NA	NA
Cattle on feed									
1977	28.7	30.9	1.2	2.5	34.6	21.0	1.0	12.2	5.9
1978	31.2	32.5	1.2	2.8	36.5	22.4	.9	26.5	10.8
1979	28.5	29.0	1.1	2.1	32.2	21.3	.8	25.7	10.7
1980	22.1	22.1	.7	2.7	25.5	17.8	.6	28.1	10.8
1981	23.9	24.8	.9	1.9	27.6	17.9	.8	28.3	10.6
1982	27.1	28.8	1.1	2.0	31.9	19.9	.9	32.7	11.0
1983	22.1	27.9	.9	2.0	30.8	16.0	.6	27.5	8.4
1984 7/	26.6	27.8	1.2	1.9	30.9	19.3	.8	NA	NA
Other beef cattle									
1977	7.1	7.3	1.3	3.0	11.6	5.5	1.4	57.0	71.3
1978	7.9	8.0	1.3	2.5	11.8	6.1	1.2	64.4	72.7
1979	7.1	7.1	1.3	2.7	11.1	5.7	.8	55.5	65.6
1980	6.9	6.9	1.2	2.4	10.5	5.7	.8	56.9	52.4
1981	7.6	7.7	1.4	2.2	11.3	6.1	.8	71.6	70.5
1982	7.2	7.4	1.3	2.2	10.9	5.7	.9	75.1	58.1
1983	6.7	7.2	1.2	2.1	10.5	5.5	.9	72.6	50.8
1984 7/	6.7	7.0	1.2	2.1	10.3	5.3	1.1	NA	NA
Hens, pullets, and chickens raised									
1977	11.8	13.3	3.5	2.4	19.2	8.9	2.7	--	--
1978	13.4	14.4	3.5	2.4	20.3	10.0	2.6	--	--
1979	14.2	15.0	3.9	1.8	20.7	11.0	2.8	--	--
1980	13.7	14.3	3.3	2.6	20.2	9.9	2.6	--	--
1981	14.2	15.3	3.8	2.1	21.2	11.0	2.7	--	--
1982	12.8	13.4	3.5	2.7	19.6	9.9	2.9	--	--
1983	11.2	12.7	2.9	2.2	17.6	8.5	2.7	--	--
1984 7/	11.6	12.4	3.3	2.1	17.8	9.2	2.4	--	--
Broilers									
1977	7.5	7.8	3.7	.8	12.3	7.1	2.8	--	--
1978	9.3	9.6	4.1	.7	14.4	8.9	3.0	--	--
1979	9.7	9.9	4.3	.9	15.1	9.3	3.2	--	--
1980	10.1	10.3	4.3	.8	15.4	9.8	3.3	--	--
1981	10.9	11.2	4.9	.8	16.9	10.4	3.3	--	--
1982	10.6	11.0	4.8	.8	16.7	10.1	3.5	--	--
1983	10.0	10.8	4.5	.8	15.8	9.5	3.4	--	--
1984 7/	10.4	10.8	4.7	.7	16.2	10.0	3.5	--	--

Continued--

Table 19.--Consumption of feed by kind of livestock, 1977-84--Continued

Year beginning October 1	Concentrates							Roughages	
	Feed grains 1/	All grains 2/	High protein 3/	Other feed 4/	Total concentrates	Corn	Soybean meal 5/	Hay	Other harvested roughage 6/
	Million metric tons								
Turkeys									
1977	2.1	2.3	1.7	.3	4.3	1.8	1.0	--	--
1978	2.5	2.7	1.8	.3	4.8	2.2	1.3	--	--
1979	2.6	2.8	1.9	.3	5.0	2.4	1.3	--	--
1980	2.7	2.8	1.8	.4	5.0	2.4	1.3	--	--
1981	2.8	3.0	2.0	.2	5.3	2.5	1.2	--	--
1982	2.8	3.1	2.0	.3	5.4	2.5	1.8	--	--
1983	2.6	2.9	1.8	.4	5.1	2.3	1.3	--	--
1984 7/	2.6	2.8	1.9	.4	5.1	2.4	1.3	--	--
Hogs									
1977	34.7	35.6	5.8	2.2	43.6	34.5	4.6	--	--
1978	43.0	43.6	6.2	2.4	52.2	40.1	5.4	--	--
1979	46.0	46.5	6.9	2.1	55.5	43.3	6.0	--	--
1980	40.0	40.1	5.4	2.3	47.8	38.0	4.9	--	--
1981	38.4	38.9	5.6	1.8	46.3	36.1	5.2	--	--
1982	37.9	38.6	5.6	1.9	46.1	35.6	5.4	--	--
1983	34.9	35.8	5.1	1.9	42.8	32.6	4.4	--	--
1984 7/	35.3	35.7	5.3	1.9	42.9	33.0	4.4	--	--
Other livestock and unallocated									
1977	5.2	5.3	1.1	1.4	7.8	2.1	.6	10.0	5.4
1978	6.0	6.1	1.1	1.2	8.4	1.8	.6	9.4	4.7
1979	6.8	7.0	1.6	1.4	10.0	3.1	.8	10.3	5.1
1980	5.7	5.8	1.1	1.0	7.9	2.6	.6	9.3	5.3
1981	6.7	6.9	1.7	1.5	9.8	3.1	.6	11.6	5.1
1982	16.3	16.6	1.2	2.5	20.3	11.4	.6	11.9	5.0
1983	9.6	9.7	1.7	1.7	13.1	2.8	.7	11.6	5.2
1984 7/	8.0	8.5	2.2	2.0	12.7	3.7	1.1	NA	NA
All livestock and poultry									
1977	118.5	124.7	20.5	16.9	162.1	95.1	14.8	128.0	155.5
1978	136.1	140.2	21.3	16.7	178.2	109.8	15.8	131.0	134.6
1979	138.0	140.6	23.0	15.2	178.8	114.8	17.1	131.6	140.6
1980	123.0	124.5	19.8	16.5	160.8	105.1	15.7	134.7	114.8
1981	127.9	131.8	22.5	14.1	168.4	106.0	15.8	173.3	140.1
1982	139.4	145.0	22.8	15.1	182.9	114.9	17.0	168.5	115.0
1983	116.7	128.1	20.6	14.5	163.9	94.4	15.5	160.2	100.9
1984 7/	124.8	128.9	22.4	15.6	166.9	101.6	16.2	NA	NA

1/ Corn, sorghum, oats and barley. 2/ Feed grains, wheat and rye. 3/ Oilseed meals, animal and grain proteins. 4/ Dry milling byproducts, fats and oils, alfalfa meal, molasses, screenings, salt, minerals and urea. 5/ 44 percent crude protein content. Soybean meal consumption reflects adjustments for crude protein levels and net supply used for feed. 6/ Silage, beet pulp and straw. 7/ Preliminary. NA = Not available.

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